

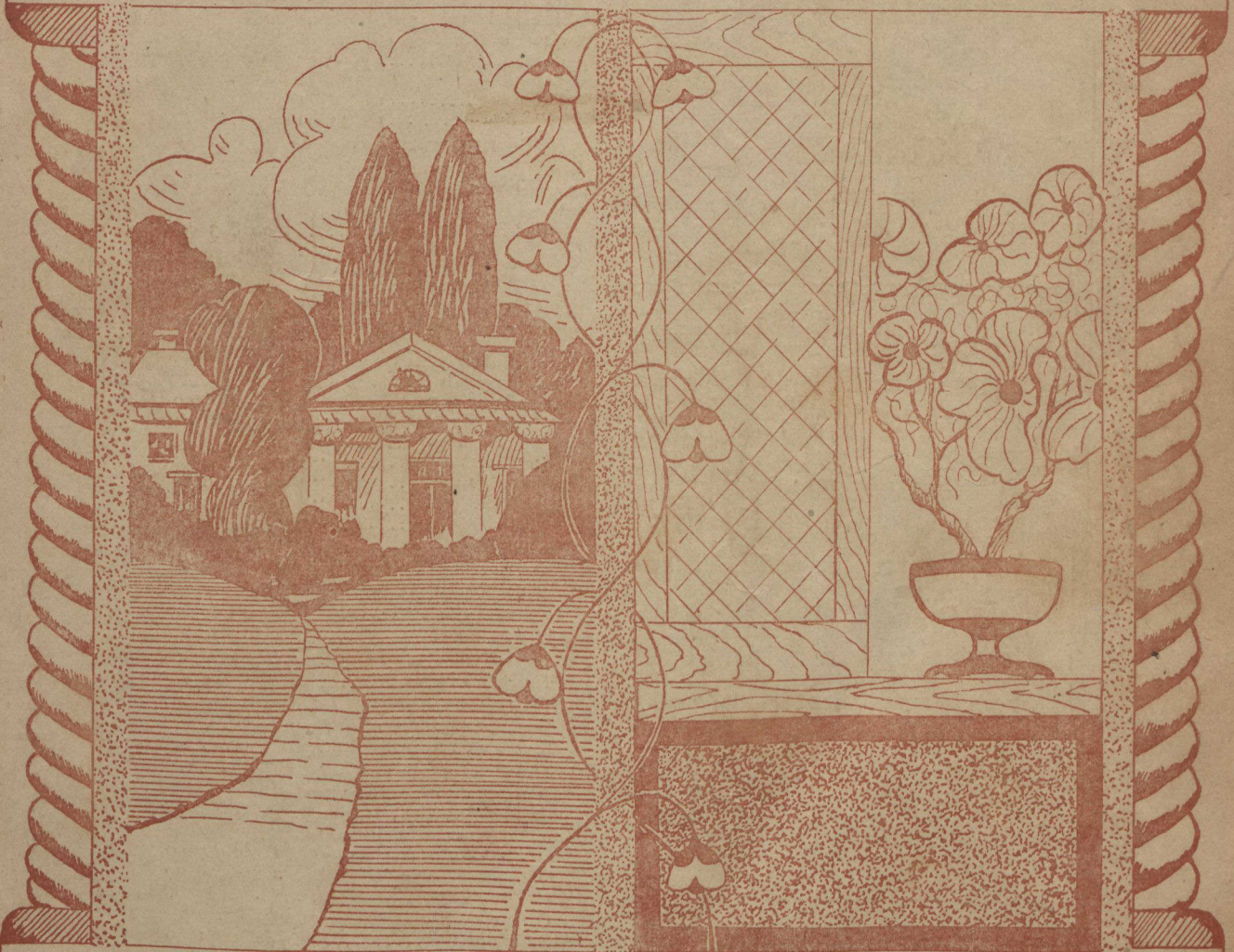
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FEBRUARY, 1904

A YEAR

THE CANADIAN HORTICULTURIST.

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Scott W G
Allan Mills
Ont.



DEVOTED TO FRUITS AND FLOWERS, CIVIC
AND RURAL IMPROVEMENT.

PUBLISHED BY THE ONTARIO FRUIT GROWERS' ASSOCIATION, TORONTO, ONT.
G. C. CREELMAN, SEC'Y, PARLIAMENT BUILDINGS.

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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.

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Toronto, Ont.

Small Fruit Plants

SPRING OF 1904.

GOOSEBERRIES—

	Per 10	Per 100	Per 1,000
Josselyn —This is the very best all-round gooseberry on the continent to day. Plant bushy, strong, vigorous, mildew-proof, very prolific, fruit large, red, smooth, quality the best. Beware of imitations. 1 year, \$1 50	\$10 00	\$80 00	
2 "	2 50	15 00	100 00
Downing..... 1 "	1 50	5 00	
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Hardy, vigorous, prolific, ripens its fruit just after the raspberries are done till killed by the frost. \$1 00 \$3 00 \$20 00

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Child's Ruby —Red, large, prolific. This currant sells for at least one-third more than the ordinary red currant, and no common variety has any show while this fruit is in sight. 1 year	1 25	6 00	
2 "	1 50	8 00	
Fay..... 1 "	1 25	6 00	
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White Grape..... 1 "	1 25	6 00	
Lee's Prolific..... 1 "	1 25	5 00	
"..... 2 "	1 50	6 00	
Red Cherry..... 1 "	1 25	5 00	
"..... 2 "	1 50	6 00	

RASPBERRIES—

Miller.....	50	2 00	
Japanese Mayberry.....	2 50	10 00	

BLACKBERRIES—

Taylor's Prolific.....		2 00	15 00
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ROSES—

Pink La France, 15 and 25c each.
Rambler, red, white and pink, 15 and 25c each.

GRAPE VINES—

Assortment of hardy varieties, Worden, Salem, Moore's Early, Brighton, etc. 1 year,	1 50	7 00	
2 "	2 00	10 00	

STRAWBERRIES—

Clyde, Wilson, Saunders, Splendid, etc.		1 00	4 00
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GARDEN ROOTS—

Rhubarb Roots, Linnaeus..	1 50	3 00	25 00
" Victoria..	1 50	3 00	25 00

The prices in first column indicate the charge for mailed orders, which includes prepayment of postage; the second and third columns go by express at purchaser's expense.

The stock is all first-class every way; orders will be filled consecutively as received as early as possible after the season opens. Cash with order will save time and correspondence. Enquiries from dealers re Josselyn Gooseberry Strawberry-Raspberry, Ruby Currant and Rhubarb Roots solicited.

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P.O. Box 54, Owen Sound, Ontario, Canada.

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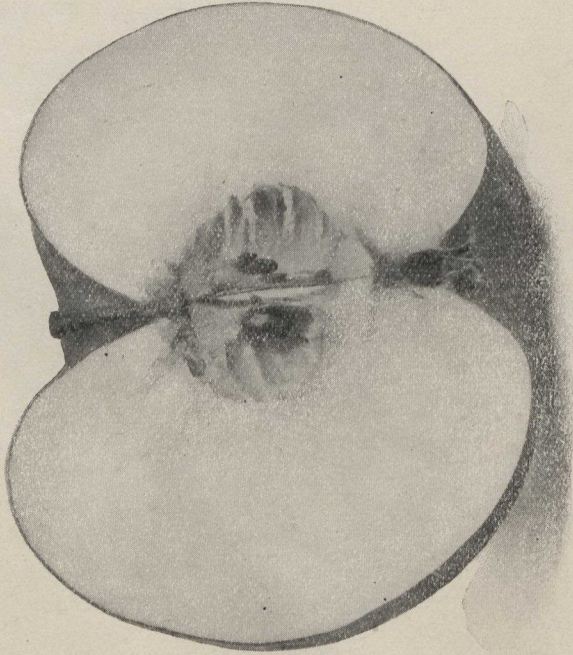
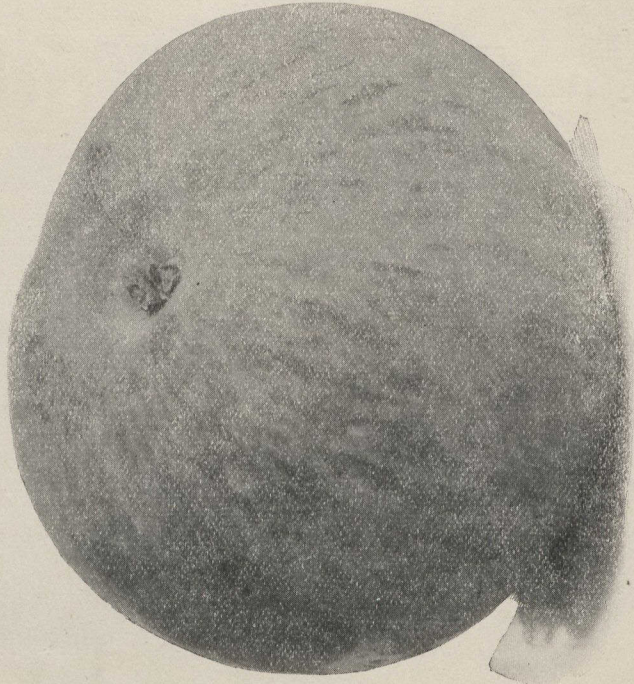


FIG. 2722. THE SAINT LAWRENCE.

The Canadian Horticulturist

FEBRUARY, 1904

VOLUME XXVII



NUMBER 2

THE ST. LAWRENCE APPLE

THE St. Lawrence apple is not planted in the commercial orchards of Ontario bordering on lakes Ontario, Erie or Huron, being inferior to other autumn varieties of its season, but it is valued in orchards along the St. Lawrence river, and in parts of the province between latitudes 45 and 46. In the Niagara district it is considerably affected by scab and by codling moth.

ORIGIN: United States.

TREE: Hardy, vigorous and productive.

FRUIT: Large, often $2\frac{3}{4}$ x $3\frac{3}{4}$; form, roundish oblate; color of skin, yellowish, with distinct stripes and splashes of carmine; dots, obscure; stem, $\frac{5}{8}$ of an inch long, inserted in a large deep regular cavity; calyx, closed in a small deep basin.

FLESH: Color, white, slightly stained; texture, crisp, tender, juicy; flavor, vinous, slightly acid.

SEASON: September and October.

QUALITY: Dessert, good; cooking, very good.

VALUE: Home market, very good; foreign market, good.

ADAPTATION: Double starred at our Georgian Bay station; single starred at Burlington and Lake Huron stations.

Ottawa District: Mr. R. B. Whyte writes: I have not had much personal experience with the St. Lawrence apple. I

long ago cut out my only tree as unprofitable, and that has been the general experience in this district. It is fairly hardy, and when we do get them they are very fine specimens, but unfortunately it is a very shy bearer.

The Lake Huron District: Mr. A. E. Sherrington writes: The St. Lawrence tree is vigorous and hardy here. The fruit is large, and fine for dessert, but too soft for shipping and subject to scab; therefore I cannot recommend it as a market apple.

East Central District: Mr. Elmer Lick, Oshawa, writes: The St. Lawrence is a fine dessert apple when free from scab. It is not suited for shipment to distant markets, but is fine for home use. To secure clean fruit is requires thorough spraying. It will never be a commercial apple in this section, because we have other varieties superior in many ways, which will succeed as well.

The St. Lawrence District: Mr. Harold Jones, of Maitland, writes: The St. Lawrence apple reaches its highest perfection in the St. Lawrence valley. The tree is hardy and vigorous, and early and abundant bearer, and the fruit is in season the first three weeks of September. This apple finds ready sale as a table apple and as a show apple for fruit stands, but it is not tart enough to be in demand as a cooking apple.

East Central District: Mr. Wm. Pickard, Newcastle, writes: The St. Lawrence apple is not largely grown in my district. It is apt to spot badly, and while a first-class dessert apple for home use, and is well thought of and in demand in Montreal, usually bringing top prices, it is by no means a good export apple. Under ordinary conditions it usually lands in somewhat bad con-

dition, and consequently nett returns are anything but satisfactory.

Essex District: Mr. J. L. Killborn, Leamington, writes: St. Lawrence apple is not grown at all here, at least I have not seen a tree of it in this county, but believe there is an odd one. There are a few trees growing in Lambton county, but they are much affected with the apple scab.

Editorial Notes

PLANTING TIME is near at hand. The fruit grower, who intends to enlarge his fruit garden or his orchard, should employ these days of comparative leisure in studying the varieties best adapted to his purpose.

* * *

MAKE UP A LIST and write the most reliable Canadian nurseries for their best terms. By dealing direct, especially if the order is large, much lower prices will be accepted than by ordering through an agent, whose expenses and time must be paid for out of the sales.

* * *

FOR THE COMMERCIAL ORCHARD the novice in fruit growing should write the Department of Agriculture for the report of the Fruit Experiment Stations of Ontario, in which will be found reliable information with regard to the most profitable varieties and those best adapted for the various sections.

* * *

FOR THE HOME GARDEN quite a different list may be selected, for many of the best and highest flavored fruits for the table are not sufficiently productive to be worthy a place in the market garden. Inquiries with regard to varieties, their characteristics and their adaptability to the various sections of

Ontario will be cheerfully answered in the columns of the Canadian Horticulturist.

* * *

WORTHLESS AND INFERIOR VARIETIES should be eradicated or top-grafted this spring. It costs as much to grow a cider apple as a good market variety; the one sells at 10 cents a bushel, the other at 50 cents.

* * *

TOP-GRAFTING is a simple operation, which every fruit grower should practice for himself. Professionals charge \$3.00 a day for this work, and often make double that by charging three cents for every cion that grows. There is no mystery about it. The accompanying cuts will show the process without explanation.

* * *

PRACTICE in grafting of course makes perfect, and the novice should first try his hand upon some waste branches. The great point is to make clear smooth cuts,

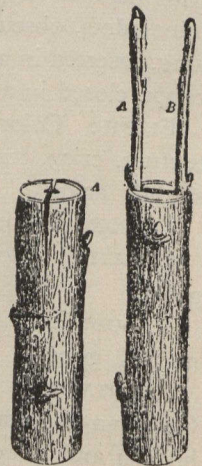


FIG. 2723 GRAFTING.

and for this sharp tools and a steady hand

are essential. The inner bark, or cambium layer of cion and stock must exactly fit in each case, for here is the place at which the union takes place. Care must also be taken, in

sooner, the pruning is apt to be neglected. Every tree in the orchard should be gone over with knife and shears at least once a year if the vigor of the remaining wood is to be maintained and good fruit to be harvested.

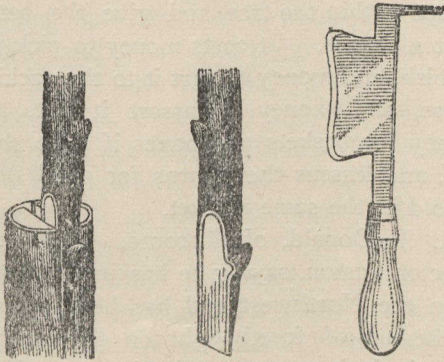


FIG. 2724. TOP GRAFTING.

applying the wax, to exclude the air from the cleft, or the parts will dry up before growth begins.

CIONS may be cut any time during the winter when the wood is not frozen, and stored in the cellar. They should be packed in new sawdust, of which the natural moisture is quite sufficient to keep the wood plump and fresh until needed in spring.

CUTTINGS of currants and gooseberries and grapes made in pruning may be also preserved in the same way as the cions until planting time, and if given a fair chance 90 per cent. of them will grow. Quinces also will grow from cuttings without much difficulty. Cut them five or six inches long, and plant to leave only one bud above the ground. The earth must be packed firmly about them.

PRUNING should be pushed forward every fine day in winter. Spring, with its draining and fencing and cleaning up and planting, is a busy time, and, if not attended to

SPRAYING also is facilitated by careful pruning. A tree whose top is a brush heap, full of useless and half-dead wood, wastes much valuable material and time is money in this work. Every branch and every bud should exist for a purpose; here is the ideal in an orchard tree, and the grower should try to attain as near to perfection as possible. If three treatments only with Bordeaux are to be applied, we would advise (1) just before leaf buds open, (2) as blossoms are falling, and (3) about a fortnight later.

THE USUAL FORMULA for Bordeaux is copper sulphate, 6 lbs.; lime, 4 lbs., and should be first diluted in water, at least a gallon to each pound, and then poured together and the balance of the water added. If not done so there will be flaky sediments which will clog the nozzle, and the spray will not be properly mixed. Possibly even this formula is too weak for the best results. Johnston, of Simcoe, used 12 lbs. of copper sulphate, 18 of lime, and 50 gallons of water, and had wonderful results last fall with his apple crop; but no doubt this was quite an extravagant quantity.

A SPRAYING RIG is a great convenience where much of this work must be done. A new power sprayer is being introduced, run by carbonic acid gas pressure, and we hope it may simplify the whole business. Where two or three growers unite in the purchase, a power machine of some kind would prove the greatest economy.

THE CANKER WORM is very troublesome in some parts, and must be fought persistently if the trees are to be saved from destruction. Sticky bandages applied in fall or spring will catch the wingless female moths as they climb the tree to deposit their eggs. Failing this, spraying with Paris green, 4 ounces to 40 gallons of water, when the young worms first appear on the young foliage, is effective. If neglected until they grow a little, they are much more difficult to kill.

* * *

BASKETS AND BOXES for the coming season's fruit crop should be laid in early. The popular basket for currants, gooseberries, cherries, choice peaches and choice pears is the 6 2-3 imperial quart basket holding about nine pounds of fruit, or nearly one peck. The 12 quart (imperial) is too large except for apples, pears, tomatoes and second size peaches. The accepted apple box is 10 x 11 x 20, holding about one bushel. These may be ordered in the flat, ready for nailing, which can be done by hand for less than one cent a box. Such boxes should be turned out at a regular box factory for about \$10.00 a hundred.

* * *

A FINE COLLECTION for the forestry exhibit at St. Louis has just been forwarded the Department of Agriculture, Ottawa, by K. N. Grout, Grimsby, containing one walnut board, 21 inches x 12 ft. x 1 in.; one butternut board, 16 inches x 12 ft. x 1 in.; one sassafras board, 18 inches x 12 ft. x 3/4 in.; one chestnut board, 21 inches x 8 ft. x 1 in.; one basswood board, 19 inches x 11 ft. x 3/4 in.

Pack to Command Buyers

AFTER each season all fruit growers come to the same conclusion, viz., that more care in packing and in selecting would pay; but as often, when the new season comes around, is the same old way fol-

lowed up. We believe the selection might well begin in the orchard, where only the larger and finer fruits are worth gathering. Poor, scabby and small specimens of pears, apples and peaches should never be touched except to thin the tree and give the better fruit a chance. It costs money to pick the rubbish, and money to cart it to the packing house, and money to assort it out, and money for baskets and boxes if it be shipped, and lessens the returns for good stock if sold in the same market.

R. A. Donald, of Toronto, writes our director Caston, saying he has just returned from the Northwest and has been amazed at the lack of forethought on the part of Ontario fruit growers and shippers. "Fruit from our province," says he, "is far better than that from any other place, but it will not sell in competition with stuff from other places until there is more style about its packing and more selection about the fruit. I would impress upon you strongly the necessity of packing your fruit in nice, small baskets, the fruit carefully selected and wrapped, in order to catch the best customers and make the largest sales. This year we had a glut of plums, but in other parts these were much sought after. Now had these been selected, wrapped and nicely packed in five pound baskets, they could have been shipped to the west in such a condition as to have positively forced themselves upon the attention of the consuming public.

Pruning the Norway Spruce

A MEMBER of the Waterloo Horticultural Society writes:

"I have seven Spruce trees in my lawn about eight years planted. I am thinking of pruning them into different shapes, such as square, round, diamond, three cornered, etc. Could you give me some pointers to guide me?"

To bring evergreens into shapes, such as our correspondent desires, is a gradual work and cannot be done in one or two cuttings.

Indeed, for best results, trees seven years out cannot easily be manipulated, nor can they be cut back very severely without injury. We would advise our correspondent to begin with a light cutting about June 1st, topping back the tree to about the desired height, and prune with hedge shears the rest of the tree into the desired shape. This must not be done too severely, but with judgment, according to the size of the trees, and be continued annually until the young growth fills up all open spaces. In England the shaping of the yew is begun in the nurseries, while the trees are still quite small, and continued for many years, until the designs are perfected, when they are sold at a fancy price. We do not commend this shaping of trees unless in small yards and near the house, where natural forms would take up too much space.

The following clipping from the *Agricultural Economist*, of London, England, will give the view of topiary work taken in a country where it has been much practised in the past:

The day has long since passed when the clipping of shrubs and trees was considered the highest form of garden art, and nowadays one seldom sees the strange birds and beasts which once delighted the eyes of a former generation. Still there are one or two gardens to-day where topiary is practised, and in not a few of the old country pleasure grounds single examples are yet to be found. In the days of the Romans the formal garden flourished exceedingly, and Pliny tells us among other wonders in his *Tusculan villa*, of the forms of animals carved in box, and the topiary figures keeping guard over the strange scene. Almost every country adopted the fashion for a while, and the yews at Versailles, long since neglected, were once among the wonders of those gardens of folly. The introduction of topiary work into modern gardens cannot be desired for an instant, but one cannot help feeling thankful that a few good specimens still exist in various parts of England. Beautiful they cannot be, but undeniably quaint they certainly are, and serve to carry us back to the days of the ruff and farthingale, when gardens were appreciated more for their sentimental interest, and horticultural shows were unknown. One of the finest topiary gardens is at Levens Hall, Westmoreland, and here may be seen a cup and saucer, a judge's wig, a lion and crown, an umbrella, and many other devices neatly

trimmed in living yew. At Elvaston there are several peacocks, a Chinese pagoda and a hen similarly treated, and in other gardens there are commoner forms, as trees clipped into pyramids, cones and globes. Visitors to Haddon Hall cannot fail to notice the clipped yews in the garden facing the picturesque lodge, one, a peacock, representing the Manners' crest, and the other a boar's head—though one would hardly realise it without being told—that of the Vernon family. These quaint emblems stand side by side, and remind one of the old story of Dorothy Vernon and her sweetheart, and the romantic union of the two families. In spite of its being a deformity and a travesty of nature, we should be sorry if the last of the old topiary figures were to be swept away into the memories of the past.

Much Pleased With an Ontario Fruit Farm

WE have an occasional inquiry from a young Englishman of means about the purchase of a fruit farm in Ontario, and in several instances our advice has resulted in a satisfactory settlement. We never advise the purchase of a large farm, because money would certainly be sunk in such a case, but rather one from fifteen to twenty-five acres in extent. Such a farm always pays proportionately best on the investment, because less money is wasted on ill-applied labor, and the most of the work can be done by the owner, who is thereby learning how best to manage his own affairs.

Just now we have a letter from a young man of this class, who, in accordance with our advice, purchased a well planted fruit farm near Lake Ontario, of about twenty-five acres in extent, with an old-fashioned farm house, good lawn, and old trees about it, and a well-fitted barn, stable, and poultry house, for about \$6,500. He has now been one year on the place, and writes:

Sir: I must tell you that considering the glut that has been this year (1903), I have had a very satisfactory start. I had over 600 baskets of Early Richmond cherries, 3,500 baskets of plums, about 800 of peaches, and am now in my grapes, which I think will yield about three tons to the acre.

The home spot is lovely here, and I am more than satisfied, not only with this place in particular, but with farming in general.

Sour Cherries for Succession

THE same gentleman writes for advice in selecting varieties of sour cherries adapted to keep up a succession of fruit during the season.

"When my Early Richmond cherries," says he, "begin yielding anything like a crop, I shall be compelled to engage a great deal of help. I should like a sequence of sour cherries to justify my having a gang of pickers until raspberry time. I have about 140 Early Richmond, and about 40 May Duke, and should like to put out, say, 50 Montmorency and 50 Morello. I should like to hear what you have to say for these varieties, or if you would suggest any others."

There is no better sour cherry for profit to succeed the Early Richmond than the Montmorency. It hangs well on the tree until about August 1st, and always sells well; while the English Morello hangs still longer and is about the latest of market cherries. Of the Dukes, one or two should be mentioned and in particular the California Advance, which in season immediately succeeds the May Duke. It is probably identical with the Late Duke, and is not only a beautiful cherry but also a most abundant bearer. Another wonderfully fine cherry, as grown in sandy loam in our experimental plot, is the Reine Hortense, of which the season is also about the middle of July. Though of the Duke class, the tree is more vigorous and spreading, and the fruit is very large and luscious. The cherries are evenly distributed on the tree, and are so attractive in appearance that they command their own market.

Power Sprayers

WITH so many manufacturers working to meet the present demand among fruit growers for some satisfactory power sprayer, we hope for one both economical and effective before very long. Already we have a sprayer which is run by carbonic acid gas pressure, by which the power is estimated to cost only about 25 cents a barrel, and to give double the pressure of hand power. Gasoline engines are

expensive, so that at present these are not likely to be used except by the professional sprayman, who may make it pay to apply spraying mixtures at a certain price per gallon. Another scheme, which is not new, is to have the pump run by a sprocket chain from the wagon wheel, but so far this has been imperfect, because the power ceased when the wheel stopped. In a new sprayer of this kind, recently invented in Illinois, there is an air chamber of half a barrel capacity in which the air is so compressed, as the wagon moves, that the power is kept up for some minutes after stopping. Surely this is hopeful progress.

Bark Lice

M R. JAMES SHAW, of Lakeport, has a young apple orchard seven years planted, which is growing nicely, but is affected already with the oyster shell bark louse. He writes:

"I have been advised to grease the trees, but before doing so I write for your advice. If grease or oil is recommended please state what kind is preferred and in what season it should be applied."

The oil that is most destructive to the bark louse is kerosene, which is at the same time injurious to the trees unless applied with great care. Painting with linseed oil is also said to be helpful.

We would advise our correspondent to scrape off all loose bark, and then about the 1st of June, when the young lice begin to move, wash thoroughly all parts affected with a strong solution of soft soap and washing soda; or spray thoroughly the trunk and branches with washing soda and water, $\frac{3}{4}$ of a pound to a pail of water.

Kniffen System of Grape Pruning

M R. W. C. WEBSTER, Stoney Creek, writes:

"In the November number of your journal I notice a reference to the Kniffen system of grape pruning. I would be very glad if you would explain it. I changed my vineyard to this system last year for convenience, labor

saving, and profit. We left from 50 to 90 buds on each vine; but this season my crop has proved a failure. I was attributing the failure to the system."

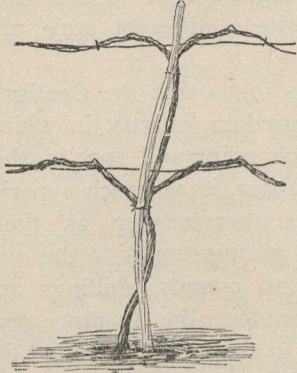


FIG. 2725. THE KNIFFEN SYSTEM.

The Kniffen system is a very simple one, and may be easily understood from the accompanying cuts. Instead of two arms on the bottom wire, as in the Renewal system, four arms are trained out horizontally, the lowest about three feet from the ground, and the higher about five or six feet. From these the young wood is allowed to hang, and of course little or no tying up is required. About one dozen buds on each arm will give as much fruit as the vine should produce.

One objection to this method is that the upper arms usually become stronger and seem to take near all the vigor, so that the lower ones give little fruit. This may be overcome in part by starting two uprights from the ground, one to furnish the arms on

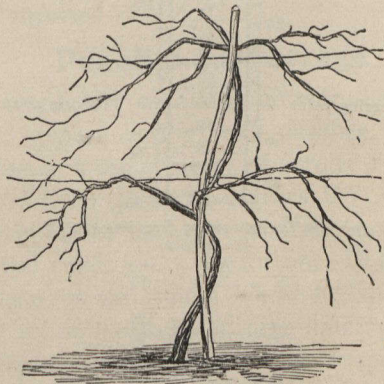


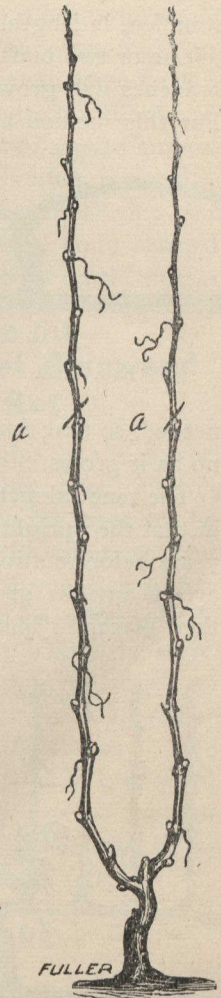
FIG. 2726. THE KNIFFEN SYSTEM.

the first wire, the other those on the second.

Many growers renew the whole arm each season, back to the upright, taking in its place the strongest branch, so that one or two cuts accomplish the work of much spurring.

The yield from Kniffen vines of strong growing varieties should be quite as large as from any other method. Concords should yield twenty to thirty pounds per vine on the average, but the Kniffen method is not well adapted to weak growing vines, such as the Wilder or Delaware.

For Canadian farmers, who have little time to spend in their vineyards, this system is very well; but for the gardener, or the vineyardist who has some time to devote to the work, the renewal system is no doubt the ideal thing; or for strong growers, like Concord, that American modification of it known as the Fuller system.



FULLER

FIG 61

FIG. 2727. THE FULLER SYSTEM.

The Fuller System

This method is so well illustrated by the engravings that we scarcely need to describe it. The first year a single upright cane is allowed to grow; in the spring of the second year this is cut at about one foot from the ground and only two canes permitted to grow; and the third year these two canes are tied to the bottom wire and stopped at about

four feet in length. All spurs are cut back to one or two buds, from which the fruiting branches will grow out during the summer. For this method at least three wires are

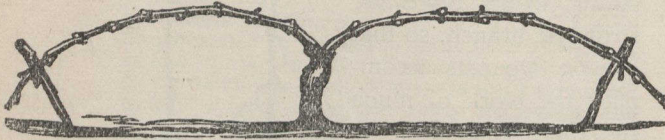


FIG. 62.

FIG. 2728. THE FULLER SYSTEM.

needed, so that the young wood may be tied up as it grows.

The renewal method differs from this only in that the uprights are each grown for two years before cutting down, and young canes are meanwhile grown in readiness to take their places. The number of these depends



FIG 63 (FULLER)

FIG. 2729. THE FULLER SYSTEM.

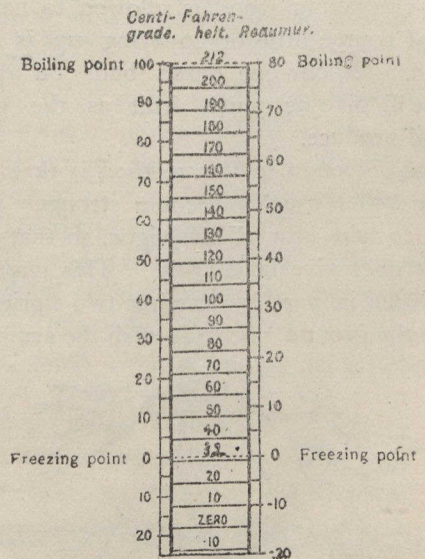
much on the variety and strength of the vine, and the fertility of the soil. The usual distance apart for the upright canes is from twelve to fifteen inches. On each of these upright canes there will be seven or eight fruiting buds.

Temperature Scales Compared

IN Canada and England such universal use is made of the thermometer invented by G. D. Fahrenheit, in which zero is 32 degrees below the freezing point, and 212

is the boiling point of water, that we are quite at sea when we read in a foreign journal of 10 degrees R or 10 degrees C, representing quite a different scale of graduations.

It seems to us that the Centigrade thermometer used in Europe, in which zero is the freezing point and 100 is the boiling point of water, is as much superior to the Fahrenheit thermometer as the decimal scale of counting money to the old English division into pounds, shillings and pence. There is another, the Reaumur scale, which is similar to the latter, only that 80 degrees is the boiling point instead of 100. During this season, when we are closely watching our thermometers to know the probable danger to our fruit crops, a diagram showing these different scales of temperature notations will interest our readers. We also attach formulæ for converting one system into another.



Formula for converting from one system to another

$$F = \frac{9C}{5} + 32$$

$$C = \frac{5(F - 32)}{9}$$

$$R = \frac{4(F - 32)}{9}$$

Storage Temperature

AS already stated in these pages, it has been definitely proved that the lower the degree of temperature at which a fruit can be held with safety the longer it can be kept in good condition. In Chicago our apples of 1892 were held until 1893 for the Columbia Exposition at 33 degrees, and fairly good results were obtained; but since that it has been found that apples will not freeze at a temperature of 31 degrees, and that if they can be stored at this degree, without danger of parts near the pipes going lower, they will keep in almost perfect condition. It is also found that at this temperature the fruit is less inclined to scald, rot or mould, while quality, aroma and flavor are fully as good as if kept at a higher temperature.

Spraying for Codling Moth

IT would seem that thorough spraying with some good arsenical poison is the most hopeful remedy yet discovered for codling moth. The most vigorous experimental work is in progress in Australia with arsenicals, and so far the results shown are that while untreated trees gave 42 per cent. of the apple affected, those sprayed with Paris green showed only 10 per cent. of the fruit infested, and those treated with the stock solution of Kedzie's arsenite of soda, 1 lb. in 40 gal. of lime water, had only 5 per cent. infested.

Peaches in Storage

LOISEAU, of Paris, France, has been experimenting with peaches in cold storage at a temperature of zero to 1 degree C. (or from 32 to 33 degrees F.) In one experiment he kept 600 peaches one month in good condition. Unfortunately he does not mention the kind. Those he had wrapped kept no longer than those unwrapped.

One striking feature of his experiment was that peaches submitted to cold storage

kept longer after removal than those picked fresh from the trees. The latter could not be exposed for sale more than three days at the most without deteriorating, while the refrigerated peaches preserved a good appearance for six or seven days after removal.

This is contrary to the general view, but if true, it is a most valuable point learned, and adds to the importance of a cold storage to every fruit section.

For Prevention of Plum and Cherry Rot

EARLY attention is wise for the prevention of plum and cherry rot. During mild days in winter, when the trees are being pruned into shape, the mummy fruit should be removed and burned, as it contains spores for the propagation of the fungus. In early spring, before the leaves appear, the trees may be sprayed with a solution of copper sulphate, 1 lb. in 25 gallons of water; and before the blossoms open, with bordeaux made with 6 lbs of copper sulphate, 4 lbs. of good quick lime, and 40 gallons of water. This treatment may be repeated as soon as the blossom falls.

Asparagus Pays

BADLY planted and poorly cultivated asparagus bed is not only unprofitable, but an actual expense to the owner. A half acre at Grimsby, planted thinly many years ago on very dry sand, has never paid for the plants; and now comes the profitless task of rooting them out. In contrast with this, Doan, of Illinois, said at the last meeting of the State Society that he had grown asparagus for the Chicago market for twenty years, and that a net return of \$150 to \$200 an acre could reasonably be expected from it. In setting, he plows furrows 5 or 6 feet apart and 6 or 7 inches deep, then he sets the plants two feet apart in the furrows and covers with a few inches

of soil. As the plants grow during the season the furrows are gradually filled up by cultivation. When winter sets in the asparagus is cut off and given a good covering of manure, which can be worked into the ground the following season.

Plans for Successful Fruit Growing

CEASE GROWING SECOND CLASS FRUIT.

NOT only should our Ontario fruit growers cease shipping poor grades of fruit, but they should cease to grow it. It is a constant loss, because the trees occupy valuable space in the orchard, takes valuable time to gather and pack; uses costly packages; costs as much as the best fruit for transportation and sale; brings down the reputation of the grower in the market, and lessens the net returns for his fruit crop.

It is good advice, and often given, to make some disposal of the poor fruit at home; but a better plan is to *cease growing it altogether*. How shall this be done? Well, in some degree the following hints will help bring it about:

I. Change your varieties. There are a few kinds of apples that grow uniform in size and color, and are not much subject to scab. Select these for your district and top-graft all poor varieties accordingly; four or five kinds of pears succeed and will bear distant shipment, substitute them for the small kinds or the natural fruit; a few varieties of cherries and plums are not subject to rot, and some grapes are scarcely ever affected with mildew. Choose by all means such varieties.

II. Spray, Cultivate and Manure in the best manner. Details of these are so often written up that we pass them with the simple mention.

III. Prune with an eye to reduce the amount of weak and crowded wood over the entire tree, beginning from the exterior and working inwards. This work must be done with more judgment and deliberation than

has been customary. The amount of fruit bearing surface will be thus decreased, leaving, of course, the best and most vigorous fruit buds. This will leave less wood to be sprayed, less fruit to gather, and better fruit for market. No saw should be necessary in an orchard that is pruned annually with pruning shears, but unfortunately this work is frightfully neglected even in some of our finest orchards.

IV. Gather only the best fruit. With labor so high priced, and fruit so low priced, it does not pay to waste time. We have been in the habit of gathering all our apples, pears, cherries, plums, peaches, etc., in baskets and boxes; of bringing them all to the packing house and turning them out on packing tables for sorting. In many cases we believe this could be done economically in the orchard, leaving the scrubs on the trees. In case of apples, these could afterwards be shaken down for cider.

V. Make successive pickings. In peaches, successive pickings are customary already because of the successive ripening of the various samples; but there are good arguments for extending the practice to many other fruits if a reputation for a uniform high grade is desired. Red Astrachan apples, for example, do not color up all at once, but beginning with the first week in August, they continue during the whole month. At Maplehurst we have an orchard of over one hundred trees in full bearing, and get the best results by going over the trees four or five times, the pickers selecting each time those in the pink of perfection for fancy shipment. Were these all gathered at any one time, either a large portion would be very immature in case of early gathering, or an equally large portion would be over ripe and fallen, in case of late gathering. This same method we have adopted with our Bartlett pears, making our first pickings about the first of September and the last about the 20th of the month.

VI. Uniformity of Maturity and Size.

The shipper of fancy stock, who indeed is the successful fruit farmer of the near future, must not only see that he grows and ships good stock, but in the same package he should have uniformity in size, color and maturity. Whether to some extent this can be more economically done in the picking or only in the packing will be for each individual to decide, but where a grower is handling his own stock and knows how things should be, we think much can be done in gathering to save after handling.

Powell, of the U. S. Department of Agriculture, says on this subject of "Cold Storage":

It is not possible to secure a uniform degree of maturity and size when all the apples on a tree are picked at one time, as fruit in different stages of growth is mixed together on the same tree. The apples differ in size and maturity in relation to their position, the upper outer branches producing the large, highly colored and early ripening fruit, while the apples on the side branches and the shaded interior branches ripen later. Greater uniformity in these respects is approached by proper pruning and by other cultural methods, but the greatest uniformity can be attained when, like the peach or the pear, the apple tree is picked over several times, taking the fruit in each picking that approaches the desired standard size and maturity.

Summer apples, like the Yellow Transparent, Astrachan, and Williams, are usually picked in this manner, and fall varieties, like Twenty Ounce, Oldenburg, and Wealthy, are sometimes treated similarly. In recent years a few growers of winter apples have adopted the plan for the late varieties, with the result that the size, color and ripeness of a larger proportion of the fruit are more uniform.

Immediate Storage. The keeping quality of all kinds of fruit is seriously injured by the common methods of handling. Peaches and plums are gathered in baskets and set down for hours in the hot sun before shipment; pears and apples are sometimes left in piles in the orchard, heating and ripening, or held in a warm packing house, with no cool storage to prevent the progress of ripening. No wonder, after such conditions previous to shipment, that we should hear much of slacks and wastes in our export

apple shipments; or that peaches, plums and pears should reach Winnipeg in a disgraceful condition.

Powell's remarks under this head are also pertinent. He says:

The removal of an apple from the tree hastens its ripening. As soon as the growth is stopped by picking, the fruit matures more rapidly than it does when growing on the tree and maturing at the same time. The rapidity of ripening increases as the temperature rises, and is checked by a low temperature. It appears to vary with the degree of maturity at which the fruit is picked, the less mature apples seeming to reach the end of their life as quickly or even sooner than the more mature fruit. It varies with the conditions of growth, the abnormally large fruit from young trees or fruit which has been overgrown from other causes ripening and deteriorating very rapidly. It differs with the nature of the variety, those sorts with a short life history, like the summer and fall varieties, or like the early winter apples, such as Rhode Island Greening, Yellow Bellflower, or Grimes Golden, progressing more rapidly than the long-keeping varieties like Roxbury, Swaar, or Baldwin.

Any condition in the management of the fruit that causes it to ripen after it is picked brings it just so much nearer the end of its life, whether it is stored in common storage or in cold storage, while treatment that checks the ripening to the greatest possible degree prolongs it.

The keeping quality of a great deal of fruit is seriously injured by delays between the orchard and the storage house. This is especially true in hot weather and in fruit that comes from sections where the autumn months are usually hot. If the apples are exposed to the sun in piles in the orchard, or are kept in closed buildings where the hot, humid air can not easily be removed from the pile, if transportation is delayed because care for shipment can not be secured promptly, or if the fruit is detained in transit or at the terminal point in tight cars which soon become charged with hot moist air the ripening progresses rapidly and the apples may already be near the point of deterioration or may even have commenced to deteriorate from scald, or mellowness, or decay when the storage house is reached.

On the contrary, the weather may be cool during a similar period of delay and no serious injury result to the keeping quality, or the ripening may be checked in hot weather by shipping the fruit in refrigerator cars to a distant storage house.

The fungus diseases of the fruit, such as the apple scab (*Fusicadium dendriticum*), and the pink mold (*Cephalothecium roseum*) which grows upon the scab, the blue mold (*Penicillium glaucum*) which causes the common, soft, brown rot, the black rot (*Sphaeropsis malorum*) and the bitter rot (*Glaeosporium fructigenum*) develop very fast if the fruit becomes heated after picking. The conditions already enumerated which

cause the fruit to ripen quickly during the delay between the orchard and the storage house are also most favorable to the development of fruit diseases. It is therefore of the greatest importance that the fruit be saored immediately after picking, if the weather is warm, in order to insure it against the unusual development of the fungous rots.

Grafting the Cherry on the Plum

A SUBSCRIBER wants to know whether it would be possible and profitable to top-graft cherries on his plum trees. It is not strange he should ask the question in view of the immense crop of plums, and the wretched prices offered for them in 1903; yet we believe that if it were possible for plum growers to change all their plums to cherries it would be a very unwise procedure, based on experience of a single season. A few years ago everybody wanted to root out his apple trees, and now everybody wants to plant them. Four or five years ago raspberries were unprofitable, now they are counted one of the most profitable of small fruit crops.

We do not think, however, that it is possible to successfully top-work the cherry on plum stock. We have never tried it ourselves, but we know of no data encouraging it. Macoun, horticulturist C. E. F., Ottawa, gives his opinion adversely. He says:

"In my experience and to my knowledge it is not possible to successfully top-graft the cultivated cherry on the plum. If a union takes place at all it will only be temporary and the result quite unsatisfactory."

Peerless, Star and Trenton Apples

M R. R. T. FRASER, of Vernon, B.C., asks for a description of these three varieties. It is a little premature possibly for us to attempt a complete description of these apples because they have not yet been widely tested in Ontario, but we give a few points concerning each:

PEERLESS: A fall apple of about the same season as Colvert, as grown at our Bay

of Quinte Station; size, large, even, oblate; color, greenish, splashed with dull red; cavity, wide; stem, short; skin, clean; good for dessert or cooking, and should export well; originated in Minnesota, and said to be a seedling of Duchess.

STAR: Originated in New Jersey; a good summer apple, ripening in August and keeping until November; color, yellowish pale green; flavor, pleasant sub-acid; tree productive; at our East Central Station a twenty-two year old tree yielded 16 bushels of apples.

TRENTON: Origin, by the late P. C. Dempsey, of Trenton, Ont, a cross between Golden Russet and Spy; fruit 2 x 2 $\frac{3}{8}$ inches in size; form, round oblate; color, yellow, covered with red, splashed and streaked with dark red, and with numerous white dots; flesh, yellowish, tender, crisp, pleasant, sub-acid; season, autumn.

New York State Fruit Growers

APPLE GROWING PAYS.

AT the recent meeting of the Western New York Horticultural Society at Rochester a very interesting address was given by Dr. Bailey, of Cornell University, on New York State as an apple growing region. He showed that this state had been the leading state in the production of apples, but that in the last decade there had been a falling off in apple production here, while in many other states, particularly the western, there had been very rapid increase. No doubt the explanation was found in the greater attention given to plums, peaches, grapes and small fruits, but he urged that it was a mistake to neglect the planting of apple orchards. These other fruits were now meeting glutted markets, while for the apple new markets were constantly opening up. True, it needs courage to plant an apple orchard, knowing that twenty years perhaps will elapse before any adequate returns can

be expected, but it will pay the patient planter.

ADAPTATION AN IMPORTANT STUDY.

Bowstead, of the Bureau of Soils, Washington pointed out three elements of success or failure in fruit growing: (1) Suitable climatic conditions; (2) suitable soil; and (3) suitable market conditions. In the study of the second, which belonged to his department, he found that the great peach sections were of sandy soil, and the great apple sections were of clay soils, as for example the peach sections of Michigan and the apple section of Wayne County, New York State. This agreed with the universal experience of growers, and advice to young planters could therefore be based upon it. The great point is to define clearly just what is a clay soil and what a sandy soil, so that such advice would be really intelligible.

BALDWIN AND BEN DAVIS.

Bickworth championed these two varieties as being the best commercial apples in the world at the present time. He would not be governed by sentiment, and even if Ben Davis were denounced for inferior quality, he would grow it. "We want to grow," he said, "whatever apple brings us most money, and no apple made better returns than Ben Davis.

Van Deman stoutly condemned Ben Davis. "I hate," said he, "to hear Ben Davis spoken of as a desirable kind to plant. Gano belongs to the same family, and has the same old delicious sawdust flavor; it is not one whit better; it is just redder. Black Ben Davis is just another kit out of the same litter, still if I were going to plant any one of this wretched family it would be the Black Ben Davis."

DUST SPRAY.

Prof. Gray, of Cornell University, has been experimenting with dust spray made of copper sulphate, water and lime, dried and

powdered. This was applied in the early morning by means of dust guns, and seemed to answer an excellent purpose, the dust completely covering every portion of the tree. The cost was a trifle greater than the liquid. He thought that for small trees, for small fruits, and for cherry and plum rot, the dust spray was the more effective.

BOX OR BARREL.

One question aroused much interest. It was, What shall be the future package for apples and pears, the box or the barrel? Hooker, of Rochester, advocated the barrel, because easier to pack, an important point in these days of high priced labor. One grower had used bushel crates in his orchard for gathering, had stored them in these crates and finally used them as market packages in Buffalo with excellent results. They commanded ready sale, and were cheaper than barrels. Mr. George F. Powell had packed 1,000 boxes of Jonathans in boxes, and was holding them in cold storage for special sale as fancy dessert apples. Ellwanger & Barry have for years used a small box holding about a half bushel, and packed in it fancy pears and fancy apples for a special trade. Anjou pears were wrapped in thin paper on which was stamped in crimson the monogram, E. & B., and sold to a New York buyer, delivered, at \$2.00 a box of only 45 pears. Of course every pear was strictly fancy. Winter Niles, Columbia, Josephine and Clairgeau had been tried in the same way, but none, of course equalled Anjou. Jonathan apples were put up in the same style and sold in New York at this season (mid-winter) for \$1.50 a box.

A committee was appointed to consider the box question and bring in a report, and we suggested the advisability of using a box uniform with that agreed on for Ontario which measures 10 x 11 x 20 inches inside measure.

THE CANADIAN HORTICULTURIST.

A YEAR OF INSECT PLAGUES.

THE APHIS.

Slingerland, of Cornell, pronounced 1903 a year of special insect infestation of orchards. In New York State the apple aphid had been more destructive than ever before. One orchardist declared that his apple crop had actually been reduced one-half by the lice, which had attacked both the leaves and the fruit. The latter had been small, blemished and ill shapen in consequence. Nurserymen had been great sufferers, one of them stating that his loss from the plant lice in 1903 had not been less than \$5,000.00.

"Will they trouble us again in 1904?" asked some one. "Nobody can tell with certainty," said the professor, "but if this winter you can find their little black shining eggs on the branches, you may look for the lice, unless the cold rains of spring, or their natural enemies, the lady beetles, should combine in their destruction. The best remedy is whale oil soap, 1 lb. to 7 gallons of water, applied in spring, before the eggs hatch out. Kerosene emulsion is also effective, but a little more troublesome of preparation."

PEAR PSYLLA.

Unfortunately this insect has become a more constant enemy of late, and is very numerous some seasons, frequently doing a great deal of damage. Pear growers must therefore be prepared to fight the psylla, if not every year, at least every second or third. The simplest remedy is whale oil soap, 1 lb. in 5 gallons of water, as a winter or early spring wash, to kill the old psyllas, which is now hiding in the crevices. The kerosene emulsion is also an effective remedy.

PLUM CURCULIO.

Most plum growers still rely upon jarring for combating the curculio, but it is much more costly than spraying with arsenites

and possibly not more effective. The reason of failure in the past appears to lie in the weak poison used, for it has been demonstrated that stronger mixtures are quite effective. Professor Slingerland advised the use of arsenate of lead or disparene, of which the strength is less variable. This is not yet on common sale, but can be purchased wholesale in New York City in 100 pound lots at about 10 cents a pound, and since it requires about twice the quantity as of Paris green, it is a little more expensive, but this is more than offset by its greater efficiency. This poison has been found not only excellent in destroying curculio, but also codling moth, and has the advantage of remaining in suspension ten times as long as Paris green.

ROSE CHAFER.

This insect has been very troublesome in special districts, where the ground is sandy and favorable for its transformation. In some cases it not only attacks the rose plants, but also fruit trees and even strawberry beds, and does great injury. In the latter case early spring cultivation will destroy the chafer as it is transforming in the ground, and in the former, spraying with disparene is recommended.

LEAF HOPPERS.

Leaf hoppers (or thrips) have been very troublesome, particularly on rose and grape vine leaves, but during the last year or two there seems to be a decrease in their numbers, which we hope may continue. The most effective mechanical method of destroying them seems to be large wooden trays on which tangle foot fly paper is attached, carried along the sides of the vines or bushes, and by these the hoppers are caught when purposely disturbed. Spraying with a solution of whale oil soap about July 1st seems also to be effective, but must be thoroughly applied, for it will kill only those it hits.

THE NEW SOIL GOSPEL.

Vanslyke, of Cornell, called attention to Bulletin 22, recently issued by the Bureau of Soils, in which it is claimed that nearly all soils contain sufficient plant food for all purposes and for all time to come; that, therefore, the addition of fertilizers is not so much required as such physical conditions as shall make available the plant food already in the soil. The great object of the orchardist, therefore, should be to so control the soil moisture by careful cultivation and otherwise, that it shall be in a condition to nourish the plant. It is claimed that the effect of such cultivation is more effective in the growth and fruitfulness of orchards than the application of fertilizers.

Prof. Vanslyke was not prepared to accept this teaching, neither was Mr. Jordan, director of Geneva Exper. Station. It was entirely too revolutionary.

PRIZES FOR BEST FRUIT FARMS.

Over ten years ago Mr. Geo. B. Ellwanger had made a gift to the society of \$1,000, the interest to be used in giving prizes for the best kept orchards in New York State. The committee reported having visited the orchards in competition, and had decided upon giving the first prize of \$40 to Mr. Woodward Hopkins, near Lewiston, and the second of \$20 to Mr. N. Cook, of South Byron, N. Y.

Mr. Hopkins' case was remarkable. He already had a bearing orchard, when he bought this 100-acre farm to grow grain and cattle upon and to furnish manure for his fruit farm. He paid \$36 an acre for it. Then wishing to interest his son in fruit growing and farming, he had set out on it 16,000 pear trees. Last year these had given him 35,000 baskets of fruit, and had been the means of convincing the son that farming and fruit growing was the best business in which he could engage.



FIG. 2730. W. A. MCKINNON.

Mr. W. A. McKinnon, B. A., Toronto University, Graduate-in-law at Osgoode Hall, Chief of the Fruit Division, Dominion Department of Agriculture, has in charge the working out of the Fruit Marks Act. He was at our meeting at Leamington, where his experience gained by a prolonged stay among the great apple markets of Great Britain was of especial service in our discussions. In an excellent paper recently contributed by him to the *Farmers' Advocate*, London, he gives the following:

Three Essential Conditions of Success in Fruit Growing

(1) Such orchard management as will yield the maximum of clean fruit of good quality, and such handling as will reduce to a minimum the damage to mature fruit.

(2) Such a system of storage as will enable us to tide over short seasons of congestion, and to slightly lengthen the selling season for tender fruits.

(3) Such packing as will enable us to put up our fruit in handsome and attractive form, and to offer it for sale in uniform substantial packages, of known capacity, each package containing only one grade of fruit.

Packing Apples in Boxes

THE fruit packers of Ontario using boxes are creating a very unfavorable impression in the Old Country by the use of an excessive amount of excelsior. The trade in Great Britain entirely misunderstand the object of this excelsior. They take it for granted that it is put in the cases for the purpose of economising in the quantity of fruit. As a matter of fact, our Ontario packers have not yet acquired the art of packing an apple box properly. It is quite possible, with almost any size of apple, to fill the box recommended by the Ontario, Québec and British Columbia Fruit Growers' Associations (10 x 11 x 20 inches, inside measurement) with the use of very little, if any, packing material; and those who are using boxes largely will do well, during the remainder of the season, to practice box packing. The box has come to stay, and those who first acquire skill in its use will reap the reward. Let us have numerous private experiments in the art of packing a box of apples properly, as well as public demonstrations by competent packers at Farmers' Institutes and Horticultural meetings.—*Dept. of Agriculture, Ottawa.*

* * *

THE MICHIGAN HORTICULTURAL SOCIETY will hold a two days' meeting at Port Huron on the 3rd and 4th of March, with the idea of making it international in character. Mr. L. B. Rice asks that we extend a hearty invitation to all members of the Ontario Fruit Growers' Association to attend. He says further: "The meeting will open at 9.30 standard time on our side, and again at 1.30. At 4 o'clock there will be an extra meeting for the school children. If Prof. Hutt can bring several of his students with him we shall try and have some from the Michigan

Agricultural College give them a reception at 7 p. m."

* * *

DR. JAMES MILLS, President of the O. A. C., Guelph, has been appointed a member of the Railway Commission, of which the other members are Mr. Bernier and the Hon. A. S. Blair, the latter being chairman. Mr. Blair is an extremely able lawyer, and has had much to do with the formation of the present railway act which comes in force on the 1st of February. Farmers and fruit growers alike all applaud the selection of Dr. Mills as one who knows their needs and has the deepest interest in their prosperity.

* * *

MR. G. C. CREFMAN has been appointed successor to Dr. Mills as president of the Ontario Agricultural College. We know of no one in the province better fitted to take up the responsibilities of this very important position. He has excellent natural abilities united with a long course of technical education, besides having had experience in college work while professor of biology in the State Agricultural and Mechanical College of Mississippi. He has a wonderful aptitude in managing men and affairs, and all who know him will unite in favor of his appointment to this important position.

* * *

MUCH HAS BEEN SAID in favor of thinning fruit on apple trees. President T. B. Wilson, of the New York Fruit Growers' Association, says: "When there is a general crop of apples and the crop, or set, is very full, so that the chance for small fruit is very great and widespread over the country, I think it would pay to thin to such an extent as to insure good-sized fruit. Aside from this I do not think it would pay, only for the protection of the tree."

A PEACH COUNTRY

MORE NOTES OF THE LEAMINGTON MEETING.



MR. W. W. HILLBORN, FRUIT EXPERIMENTER IN ESSEX; ALSO ORCHARDIST AND GARDENER.

THE home of our fruit experimenter, Mr. W. W. Hillborn, is situated just outside the town of Leamington, on a somewhat elevated location, and in the midst of peach orchards which extend as far as the eye can reach. Very few trees remain of those planted previous to the great February "freeze" of five years ago, but the new orchards are now coming into bearing, and in future the output of peaches from Essex must be reckoned with in our already overstocked markets.

After testing about one hundred and fifty kinds of peaches, Mr. Hillborn gives the following list as in his opinion the most desirable for commercial purposes, in order of ripening, viz.: Yellow St. John, Garfield, Early Crawford, Fitzgerald, Engol Mammoth, New Prolific, Elberta, Bronson, Kalamazoo, Late Crawford, Smock, Banner and Salway.

The Longhurst he would not plant, the Bronson and the Kalamazoo being much better; and in this our Niagara district growers will agree with him, for most of us have too many of this variety, which often grows small in size and is unattractive in appearance. The Banner is a local variety and quite a favorite in Essex.

We asked about two varieties which are great favorites with us in our own experimental plot, viz., Steven's Rareripe and Champion. While admitting them to be among the very best, he had omitted them from his list simply because they were white fleshed. Now in England the white flesh kinds are the favorites for dessert; we believe the same is true everywhere, and that the popularity of the Early Crawford for canning purposes explains the preference for the yellow color in America.

In this we are supported by Taft, of Michigan, who said that in his state some of the best white varieties are being specially grown for a fancy trade. He would not favor, however, any of those ripening earlier than the season of the St. John. We quite agree with the professor with regard to most of the early varieties, but would except a new variety, the Greensboro, a large white fleshed variety of fairly good quality, which we consider very valuable for home use or for a near market.

Hillborn has had excellent success with the lime and sulphur treatment for scale, which had established itself in his orchard before he was aware of it. One thorough treatment, just before the buds opened, was so effective that he has not since been able to find a live scale. In applying he is careful to spray on the windward side, finishing on the other side when the wind changes. With three lines of hose he applies five barrels of the mixture per day, one man being always at the steam cooker preparing the mixture.

Mr. W. A. McKinnon said that the experiments conducted by his department went to show that \$350 should provide a power spraying outfit, with which one

skilled man, with such assistance as he found necessary, could cover about 4,000 trees for the season. He had used three lines of hose, and always took care to have one man go behind to spray underneath the branches. He had used both gasoline and steam power.

Mr. W. H. Owen, of Catawba Island, Ohio, was making use of compressed air as power for spraying, and found it neither dis-

agreeable nor expensive. The apparatus is so arranged that one man does all, operating twelve nozzles from his platform at the back of the wagon. A large co-operative power sprayer of this kind would cost about \$600, and a man could spray twenty acres of peach trees in one day. Anyone owning such an outfit would have a good income making and applying a spraying mixture at a charge of 3 cents a gallon.

THE OUTLOOK FOR APPLE GROWING IN ONTARIO

Sir: I remember with considerable satisfaction and pleasure the very profitable and well attended meeting of the Fruit Growers' Association of Ontario last November at Leamington, at which I was pleased to be present during the whole session.

Great Progress.

From the time I used to meet with your association with much more regularity than I do now, along back in the seventies, I clearly saw at this late meeting that onward steps had been taken and that surprising progress had been made. Deeper and more vital questions relating to the great questions of transportation and its requirements, packages and packing stations, experiment stations and their work, horticultural topics, etc. For all of these various items, indicating large internal growth, we are most truly pleased, and do hope that this may be still more evident all over this young and promising country. Now, while we say that we are glad of the many small family apple orchards already planted and bearing all over this country, scarcely a small farm holding being without them, and even the vegetable garden having its moiety of apple trees close packed in between the rows and beds, yet we are satisfied that for commercial purposes this method of procedure is not good or profitable to men. Why? because commercially it is too small a business and not sufficient to attract the attention of the buyers or the markets. And here let me explain what is the commercial outlook that I am trying to lay before your readers and the reasons for the depression at present ruling or pervading the apple growing business in Ontario.

Plant Apple Trees.

I am about to make this proposition that before we can make apple growing as a business success we must plant apple trees on a much larger scale and grow more apples and better ones, and so make a life business of

it and not merely plant a few trees for pastime or pleasure as so many of us are and have been doing. Everybody is now having a small quantity just for family use, you know, but nobody taking proper care of them or tries to make them satisfactory in doing their best, so if they get any fruit it is all right, and if they get none it is all the same, because, you know, we have not much care or interest or money in them anyway. Now, in direct contrast to all this old kind of thing, we have made up our minds, after very long, deep and protracted consideration of this whole matter, to venture to propose another plan of working. It is to plant apple orchards on a large scale suited for the commercial requirements of the time and the markets. These may be planted wherever the soil and climatic conditions are known to be favorable, two or three in a township or half a dozen in a county, or a very attractive one near a great populous centre. The sorts to plant must be selected after a thorough knowledge of the varieties and the demands of the distant markets, and these grown to the highest state of perfection that the sorts are capable of, and the question of market is absolutely sure and profitable returns will assuredly follow. Now, providing the conditions of soil, climate, moisture and capital are all right, which is very often the case in Ontario, after proper selection and thorough preparation of soil, cleaning, culture, fencing, etc., planting is then in order, and these trees may be of good thrifty stock not over 2 or 3 years from the bud. Plant of these not less than a thousand trees for first output, and these not too many varieties, not more than four good standard sorts in the lot; but some would prefer only one or two. Then as these grow, and the capital and help will assure you, go on planting until the full number of five thousand or one hundred acres are reached and in good thriving condition. A few successful orchards in any certain locality of our country after they begin to come into bearing would secure an immense

notice from fruit men generally and be very attractive to the buyers, and the markets of the old world, where there is such an unsatisfied demand for our beautiful sound Canadian apples.

Central Packing House.

We would further recommend that these apples, as well as others grown in a neighborhood, should pass through the hands of the Central Packing Station to receive proper packing, careful handling and just and true assorting. There is no system so vital to the best interests of fruit as this modern system of station packing, and for the interests of all who are concerned it must have the most thorough and immediate attention. These stations are being planted so generally over the best fruit regions of the United States, and even in Canada, that all the particulars regarding them, their rules of working, their expense of management, their officers and systems of organization may be all easily learned by corresponding freely with them. It is essential to set these in full operation in this country. These apples, so packed and shipped away from a central packing station and labelled with a well known designation that carries value with it, and can be relied upon by the buyers to take one or five hundred or a thousand or more boxes without questioning would shortly establish a market for all the fruit that can be offered or gathered.

Management.

Now, to successfully accomplish the working of this method of large commercial apple orchards there must in the first place be the best of mature and well tested judgment and a thoroughly trained competent experience on the part of the management. There must be no trifling in this case or merely experimenting processes. They must know what to do and how to do it. Everybody cannot do it. Of course they cannot; if they could there would be nothing for anybody in it. But it is here, as in all other business, that are successful. It is simply a question of competence, wide experience and thorough business ability derived from much actual work in the orchard in the head of the directorate. In the man to do this kind of work there must be better training in head and heart, deeper study of all things related to the orchard, and the nature of his business as to conditions of soil and surroundings, etc., a general broader up-to-date intelligence on the subject of apple growing than has ordinarily come to the practical business. I may say here that this method of producing apples is not merely dreamy, but has bright rays of encouragement in it, for are we not even now having several attempts in this line of work? In our agricultural schools and horticultural colleges there are numbers of hopeful and competent young men being educated and trained for this special line of introductory apple growing as their special life-work in this country. It may not, therefore, be a long time before it may be seen that this fine promising country

may be dotted over from the rivers to the lakes with large fine beautiful orchards of apples such as will gladden the heart of the buyers in the old world and enrich the patient toilers in this. A few days ago I was corresponding with one of those young men now being educated and trained at our far-famed Ontario Agricultural College at Guelph with regard to a trip lately made by him as an enquiry tour to old Georgia, U. S., and mostly their peach regions, so successful in their shipments last summer. The following ideas were freely communicated for my information and bearing on the points at hand. I dedicate them to the apple growers of this country.

Peach Growing in South America.

"Although I consider," said he, "the Georgia peach region to be most promising and most successful regions, especially that around Fort Palley, in Houston County, where peaches are being raised in enormous quantities, and of the finest sizes and qualities, especially in the case of the Elbertas, and where a man might enter into a business in the largest desirable extent with the fullest assurances of success on account of the most perfect adaptability of both soil and climatic conditions to produce the finest desirable samples of fruit that would take a full market anywhere, and where labor and packing material are both so plentiful and so cheap, yet I am not going to settle for my fortunes in Georgia. I have had my attention directed to other fields farther away, but better suited for my designs in my future life work and lying within the borders of the Argentine Republic, South America. Here, as you know, the climatic conditions are the reverse of ours, so that when it is summertime there it is wintertime here. So for this reason a large company of capitalists are going to plant a very large area in peaches for the old London and New York markets. They will clear and plant 1,000 acres at first at least, and they want me to take charge of the work and to superintend the progress of affairs to success. When no fresh fruit can be had from the north we intend to pack and ship our South American peaches into these markets, and expect good results. As the first plantation is nearing maturity, and the demand for peaches good, we intend going on in our planting until some five or ten thousand trees are out." Now, the whole of this was a shining revelation to me, and seemed at once a feasible and splendid business undertaking. This is the kind of enterprise we want applied to the business of apple growing in this country that is at once so safe and as well adapted to the growth and production of the most beautiful, good keeping and flavorful apples. In this way the business must be made a specialty, when planting, working, cleaning, pruning and spraying must at all times and in all cases receive their proper and fullest proportional treatment through the full worklife of the trees. So the enthusiast apple grower will take a deep intelligent pride in his work and the results will abundantly attest the

wisdom of the management, he will give his fuller attention to details and thus obtain the highest awards of his race for his products in any market to which he may consign them.

Disposal of Fruit.

But about the method of disposal of the fruit. Oh, this is a vital and primary question. I would particularly emphasize the statements of my friend about the Georgia methods of marketing their peaches. The peach growers all support the Central Packing Stations located in every peach centre, and these are under the direction of good efficient boards of management. Here the sorting, packing, labelling, etc., of all the fruit of the district is properly done, and the accounts kept for each grower. There on a uniform scale as to sizes, qualities and grades the whole carload can be safely bought by the inspection or label of one basket to the full amount of the car or 5,000 baskets, because all are exactly alike, which could never be done when every man packs and sells for himself. This is the system that commends itself to our best judgment here also as apple growers. Under no other system that we can conceive of could this possibly be done either for apples or any other fruit on a large scale. This then is an outline, and remember an outline only of the

methods and managements of Canadian apple growing on a large commercial basis, and we are sure that in the no distant times of this country's products in apple or peach growing this or something like it will be practically carried out among us properly filled in with the details required for success. If not, why not? Who will propose and enact something that is preferable? That apples will be grown in this country and grown on a larger scale than ever heretofore thought of we are certain. It only remains for us to fill in the details and supply the positive requirements of success for this

country to become shortly studded over with those large flourishing commercial apple orchards from shore to shore and all through the centre of our land. Hoping, as the present writer does, though now reached his three score years and ten in the service, that he may see this enlarged system carried out over our lands. If this is the case, or ever to be the case, he will be satisfied that his labors in this behalf have not been in vain. For what he sees to-day he does not regret the feeble efforts made in the past years of his experience in this line by himself and his friends, the Fruit Growers' Association of Ontario. Yours,
B. GOTT.
Strathroy, Ont., Jan. 20th., 1904.

A CHEAP ICE HOUSE

CHOOSE a well-drained spot convenient to the house and higher than the surrounding ground.

Set corner posts of good size and almost any desired height, then put in the intervening posts at intervals of 2 or 3 feet. On the outside board up with rough slabs, old boards, or anything that is at hand. On the inside do the same. Fill the intervening space with sawdust. Inside and opposite the posts place a 2 x 4 studding and repeat the operation of boarding from the inside. Fill this intervening space with sawdust. This is usually sufficient, but if desired another row of studding may be supplied and the space filled with sawdust.

An outside wall is thus provided which will prevent changes of temperature. The doors must be so arranged as to be perfect-

ly air tight, being also provided with air spaces, or spaces filled with sawdust. In putting on the roof, observe the same precautions. Provide a ventilator at the top. If these precautions and suggestions are followed, and the drainage has been satisfactorily provided for, there will be no trouble in keeping the ice.

Put in the ice on a cold, crisp day, so that the surface of the cakes will not be moist. Fill up to the top of the ice house, then cover with 18 inches or 2 feet of sawdust. Close up the house and the ice will keep nicely until wanted for use. Begin taking out from the top, always opening the ice house in the early morning, while the air is cool and there is little difference between the outside and inside temperatures.

THE WEALTHY APPLE

BY W. F. MACOUN, C. E. F., OTTAWA.

THE Wealthy apple was originated by Peter M. Gideon, Excelsior, Minn., about 1861, from seed which he obtained from Maine. Mr. Gideon thought that it was grown from crab seed, but many doubt this. It is thought by some good authorities that there is Fameuse blood in the Wealthy, and certainly it has some of the characteristics of that variety. Owing to its hardiness, beauty, productiveness and quality the Wealthy has justly become one of the most popular varieties for planting in the colder apple growing districts. The tree will begin to bear two or three years after planting and will produce a barrel of fruit per tree six years after planting. The tree is a spreading grower, but on account of the great crops which are borne, it grows slowly after coming into bearing. This variety is very useful as a filler, as it will produce profitable crops before some varieties begin to bear. At the Experimental Farm good success has been obtained by planting these trees in a block ten by ten feet apart each way, the object being to obtain a large quantity of fruit from the land in a short time and thin out in good season. Planted in 1896, these trees had averaged up to 1903 a net return per acre above all expenses of \$121.38. This year was an off year, but the trees are in fine condition and the promise is for a heavy crop next year. The Wealthy apple exports well and keeps splendidly in cold storage. Sent in ordinary ventilated hold without cold storage, they sold in Glasgow in 1902 at 6 shillings



FIG. 2731. WEALTHY APPLES AT C.E.F., OTTAWA, PLANTED 10 X 10 FT. APART IN SPRING 1896. PHOTO TAKEN IN 1902. SOME TREES BEARING OVER A BARREL EACH.

and 9 pence per box of 128 apples. The Wealthy has three faults: First, owing to its heavy bearing habit the fruit becomes rather small after a few years, but by thorough cultivation and thinning the fruit can be kept up to good marketable size. Second, the fruit drops badly, but owing to the heavy crop there is usually a good quantity of fruit left on the tree, and for the local market our experience has been that good fallen Wealthys sell as well as picked ones, as the higher color of the fallen fruit renders them more attractive. Third, the trunk is subject to sunscald and canker. The former, and perhaps the latter, can be prevented to a large extent by protecting the trunk.

On the whole, the Wealthy is one of the most profitable apples for the more northerly sections.

Fruit Reports from Our Directors.

PRESENTED AT THE LEAMINGTON MEETING OF OUR ASSOCIATION.

Stormont, Dundas, Glengarry, Prescott and Cornwall.

(Division No. 1.)

Represented by A. D. Harkness, Iroquois, Ont.

With Mr. Lick I attended a meeting at Iroquois on April 7th; Morrisburg, April 23rd, and at Lancaster on April 24th. At these meetings the process of making the Bordeaux mixture was explained and demonstrated, as well as a practical demonstration on pruning in orchards. In this District there are so

Few Engaged in Fruit Growing

from a commercial standpoint that it is a difficult matter to organize an association, and then it is more difficult to make use of it after it is organized. If, in a district like this, where there is not much fruit grown, some arrangement could be made to have meetings under the auspices of the Farmers' Institute, for addresses and discussion on fruit growing and demonstrating, on pruning and spraying by persons who are acquainted with the local conditions, I think much benefit might be derived from it, and the Farmers' Institute would be benefited as well.

In this district I think there are only three townships that put in grain in any quantity at all and these border on the St. Lawrence river. In Glengarry there is scarcely any grain ever grown for local use. Prescott I do not know anything about as yet. Stormont, in the township of Osnabrook, there is considerable, but scarcely any in the rest of the county. Dundas, in Williamsburg and Matilda, there is considerable, but not much in the other townships. The apples that do best with us are of the Fameuse class, and can be successfully grown for commercial purposes, but from my observations I do not think it will pay us to try to grow the later winter varieties except for local use.

Plums.

Plums we cannot expect to grow successfully for about four years in every five the first buds will be destroyed. I am trying the American class of plums. Last spring I planted 8 Stoddard, 8 Hawkeye, 8 Wolfe, and I got from Dunlop, of Outremont, 4 Raynes, 2 Mountain, and 2 Mount Royal to try them in our district.

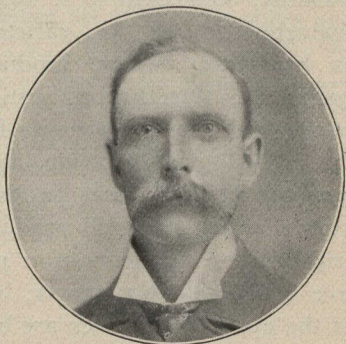
Small fruits, strawberries, currants, gooseberries and raspberries can be grown successfully.

Frontenac, Kingston, Leeds, Grenville and Brockville.

(Division No. 3.)

Represented by Harold Jones, Maitland.

For a long time it was thought that the St. Lawrence Valley would never become a fruit growing district. Mr. Jones, however, has demonstrated to the contrary. He is one of the men who has made the apple known as the "McIntosh Red" famous throughout the world. On his farm is located one of the Provincial Fruit Experiment Stations, and through this Mr. Jones has for years demonstrated to the farmers throughout the Valley the benefits to be derived from clean cultivation, proper fertilization and persistent spraying. For years past Mr. Jones has had large crops of potatoes, as a result of spraying, while his neighbors even on adjoining fields, have suffered sometimes to the extent of three-quarters of their crop from the prevalence of rot.



HAROLD JONES.

Since making my last report to this Association I have done some little work in the interests of the Society, and I hope of benefit to the fruit growers of my division.

In December last I attended the annual meeting of the Quebec Pomological and Fruit Growers, held at Waterloo, as a delegate from this society. I find that there is more interest being taken in fruit matters from year to year. The attendance was very fair at all the sessions, and the subjects were well discussed by the public, and the fruit display would have been a credit to many of our fruit growing centres in Ontario.

In January I attended twelve meetings of the Farmers' Institute in my division and gave practical talks on fruit growing, taking up the questions of varieties and giving illustrations in budding, grafting, pruning, etc., and in preparing mixtures for spraying, which created much interest and led to animated discussions at most places. These talks eventually led to quite a large correspondence with parties asking for hints and advice on location of orchards, drainage, varieties, etc., as well as many samples of fruit by mail for identification. I replied to all questions where possible, in as plain a manner as I could, and I hope it has started many in the right direction.

The experimental fruit plot on my own farm affords an ocular demonstration of the success or failure of many varieties of fruit to many visitors during the summer.

Apple Scab.

The unusually dry weather that prevailed during part of April, May, and the first half of June passed the fruit (apples) over the critical part of the season when the most damage is caused by spot, and although we had almost continuous rain since June 16th, the fruit is absolutely clean, even on orchards that were not sprayed at all. This fact gave me an opportunity of pointing out to many the vital importance of spraying early and often in seasons of normal rainfall in the spring months, for this season has shown us that if the spot can be kept absolutely in check until the middle of June our crop is absolutely safe.

In past seasons I have found that trees that I had sprayed every week from the bursting of the bud to the first of June and then stopped were freer from spot than those not sprayed so frequently and continued until the first of August. This point needs further careful study, for we must admit that we do not know all about spraying yet.

Profitable Apples and Pears.

Fameuse, McIntosh, and varieties of that family are the standards for my division, and are the most profitable to grow from a commercial standpoint. For a later keeper we have nothing yet more profitable than Scott's Winter, Golden Russet, and possibly the Canada Red. Milwaukee gives promise of being profitable, being of large size, but it has a tendency to drop during September gales, although not nearly as badly as Pewaukee, which makes that otherwise profitable apple very unsatisfactory to grow. We can grow Spys and Baldwins top grafted, also Kings, but why not leave these varieties to the lake counties, where they excel us every time, and make more and more of a specialty of the Fameuse groups, for we are in the great apple belt of the St. Lawrence valley, where the fruit grows to perfection and will keep in ordinary cellars until February.

Among the pears we have Clapp's Favorite, Flemish Beauty, and Ritson, three pears that do well in this division, and are of good quality. Intending planters would do well to stick to these varieties until other pears of good quality are found to grow successfully by the stations, for so many of the so-called "ironclads" are so poor in quality that there is very little use in planting either for home use or market.

Satisfactory Plums.

Plums for the domestic class are of very little value in this division. The most successful or promising are Lombard, Gueil, Yellow Egg, Glass Seedling, but even these will only come through the winter without injury to the fruit buds about two years out of five. Japans are

also proving unsatisfactory, being tender in fruit bud. Red June, Burbank, Ogon and Abundance will bear in seasons that are favorable for the Lombard.

The most satisfactory plums are those of the American type, and Wild Goose, Whittaker, Milton, Hammer, Forest Rose, Col. Wilder, Hawk-eye, Cherry, Stoddard being the most successful of this class. These plums are fair for cooking but are of very little value where European plums can be grown. However, they will be a boon to those in the eastern counties where grown in gardens for family use.

Among the cherries the Orel and Ostheim give splendid results, bearing good crops of fair sized cherries. Montmorency is particularly tender in bud, only having a scattered crop. May Duke is tender in bud, also Reine Hortense.

Hastings, Addington, Lennox and Prince Edward Counties.

(Division No. 4.)

Represented by W. H. Dempsey.

The heavy frost of last December did considerable injury to the buds of the more tender varieties of fruit, hence the crop of the more choice varieties of plums and cherries was very light, also some of the apples were injured. The early spring being cool and wet, no caterpillars showing and seeding time at hand, the farmers took it for an excuse for not spraying as usual. If the season had not been unfavorable for the development of fungous diseases, the growers would have suffered a great loss. As it was, the fruit was quite free from fungous and insects. In some sections a few pear trees suffered from blight. The pear tree *Psylla* also made its appearance to quite an extent in a few orchards, and the trees were so badly infested that they were noticeable for some distance.

Apple Growing County.

The year has been a favorable one for all engaged in the fruit business in this district. Fair crops of clean, well colored good sized apples brought fairly good prices in the orchard. Pickers, packers and coopers received high wages for their services, the only drawback in the business was the scarcity of help and of barrels.

The County of Prince Edward has again proved itself as being one of the best apple producing counties in the Dominion, producing between two and three hundred thousand barrels of export apples this season, as well as a large quantity of Damson plums. Some of the growers had from 100 to 400 bushels of plums growing, you might say wild, in fence corners, and sold them from 75 cents to \$1.00 to the buyers.

There are not many pears grown in the county, but what trees there were was loaded, especially of the Flemish Beauty variety, which

were particularly nice and sold for good prices. There are also large quantities of small fruit grown, most of them are sold to canning factories and local markets at fair prices. In the counties of Hastings, Lennox and Addington apples have not been grown to any great extent until within the last ten or fifteen years, when large orchards have been planted principally in those townships lying along the water fronts. Many have fruited well this year. The apple growers in this district find the fruit houses a decided advantage to them for storing their fruit, particularly the cold storage in Trenton, where the fruit is cooled down and held at a low temperature for but a trifle more cost than the ordinary storage.

Several orchard meetings were held in the early part of the season, and were fairly well attended by growers eager for information on fruit storage. Mr. Elmer Lick, of Oshawa, gave practical talks on spraying and pruning, which were very much appreciated, also Mr. F. J. Barker spoke on the advantage of thinning fruit.

Durham, Northumberland, Peterborough and Victoria.

(Division No. 5.)

Represented by Wm. Rickard, Newcastle.

As director for Division No. 5, I beg to report that the local Fruit Growers' Associations formerly organized at Bowmanville, Newcastle and Orono, in Durham County, have not been active or in good working order during the past year. For a time there was considerable interest taken, especially by the membership in Bowmanville, where a number of interesting and profitable meetings were held. Among other things that received prominence was that of building a cold storage fruit house, but up to the present no action has been taken along this line.

Outlook for Apple Growing.

In speaking of fruit culture in Northumberland and Durham, I might properly confine myself mainly to apples. There are a few who have, to a limited extent, gone into growing pears and plums and small fruits with some measure of success, but the king of all fruits, the apple, has been and is now receiving by far the greater part of the attention and work of the fruit growers of these united counties, and in my opinion, very properly so; for when we consider that the fruit townships bordering on the north shore of Lake Ontario possess the natural condition of soil and climate for the growing of apples that cannot be surpassed on the North American continent, and when we further consider the almost unlimited prospective markets for this health-giving fruit, both in the east across the great Atlantic to the teeming millions of Europe, and also in our great and glorious west (I say our glorious

west, for it is ours, the heritage of our fathers), in the near future destined to be the home of many millions of well-to-do people, surprising the world in the production of the greatest of cereals, wheat, making them prosperous to such a degree that while, generally speaking, they will not be able to grow fruits, they will have the purchasing power to buy. We say that as far as we are able to look into the future, the prospects for growing apples in this favored district along the north shore of Lake Ontario, are, to say the least, fairly good, and a considerable number of our most intelligent and progressive land owners are acting on this outlook and planting quite largely young orchards of apple trees of very considerable extent. As an illustration, I may say we find in the second concession of the Township of Clarke, in less than one and a half square miles, two hundred acres in apple orchards, some of them just coming into bearing, and as an example of the success that can be made in apple growing here, by giving it careful intelligent management, let me say that I picked and packed this season from thirty-five Ben Davis trees just ten years planted, one hundred barrels of apples.

Another Side.

Notwithstanding the above facts, there is, I am somewhat sorry to say, another side to the question of apple growing in this district. Some of our farmers having orchards are disposed to neglect them, allowing the trees to take their chances. If the orchard receives any attention at all it is after everything else is done. The inevitable result is that we have too much poor fruit, and not enough of real good fruit, and herein lies the success or failure in the growing and marketing of apples. No better work can be done than to educate every man having an orchard up to a careful intelligent management of the same. This will result in success, while neglect and inattention will result in failure, and this will apply not only to the individual but to a certain extent to the great and important apple business of the country.

The apple crop in this section for the present year has been very abundant and of excellent quality. As near as I am able to ascertain, the shipments at the various railway stations up to the present time considerably exceed anything heretofore, unless it might possibly be in 1896, the year with a bumper crop. Summing up the shipments this season, together with what is put in store, I believe I am safe in saying that Northumberland and Durham have produced this year somewhere about three hundred thousand barrels. But this great and important industry in this country is only in its infancy. In after years it bids fair to double and treble in this favored locality—the fruit townships of Northumberland and Durham.

A Suggestion.

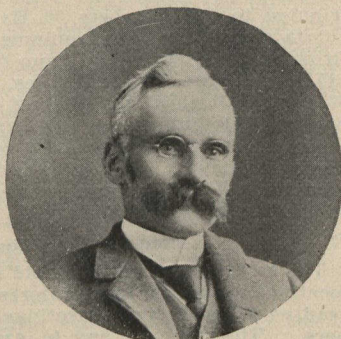
I would suggest that in connection with Farmers' Institute meetings the cultivation of fruit be dealt with by giving instruction in the best methods of fruit apple culture.

York, Ontario, Peel, Cardwell and City of Toronto.

(Division No. 6.)

Represented by Elmer Lick, Oshawa.

Mr. Lick makes a specialty of fruit culture. He has had charge of a large orchard on his own place for a number of years, and when the Fruit Marks Act was passed by the Dominion Government he was one of the first inspectors to be appointed by the Dominion Department of Agriculture. In this capacity he has had an opportunity of looking into all matters pertaining to the fruit industry, from the cultivation of the soil to the disposing of the products. He, therefore, speaks with authority, and can view the question both from the producers' and commercial standpoint.



ELMER LICK.

In making this report I think that the most important statement that can be made is that Division No. 6 has never produced as much fruit of as great value in any previous year. The apple crop, the great staple fruit in most of this division, was large and exceedingly fine in quality. The abundant rain fall of the past three years gave the trees vigor, the favorable weather during blossoming favored fertilization, the conditions favorable to the development of scab did not exist to any great extent. The insect pests were not serious, and to finish up with, the weather during the picking and packing season was the best since 1892.

Waste of Apples.

Even with all these favorable conditions, and none of them could be better, thousands of barrels of finest apples have been wasted. Several reasons have led to this, first the scarcity of labor and its high price; second, the greatest difficulty on record in securing barrels. The apple packers, in order to secure help, have had to pay up to 20 cents per hour for picking and packing, and in order to secure barrels have had to pay up to 75 cents. The cost of picking, packing, and the barrel has thus been exceptionally high, averaging some times about \$1.00 per barrel, and in many cases even more. Under the usual conditions of heavy shipments week by week, the price in the English markets would have fallen to such an extent that the apples would have scarcely paid for picking. Many dealers have made money, few have had very much profit during part of the season. If the English fruit crop had been heavy the larger portion of the apples in our section might have better stayed on the trees. Nevertheless the fact remains that apples of standard varieties, picked, packed and shipped in most careful and economical way have netted from \$1.25 to \$1.50 per barrel for the apples on

the tree. This, of course, is only where barrels had been stored at 35 cents and where picking and packing went on at the same time.

Co-operation Needed.

Many sections have sent in complaints that there was no dealer buying there. Careful inquiry has shown that in such cases orchards were small, varieties numerous, consequently the cost of packing was high and a very great difficulty in securing cars of two or three varieties at one time. If the small orchardist is to get highest price for his apples there must be more co-operation either between the producers or between the producers or between the producer and dealer. Barrels must be stored early and in a clean place, producer must take more responsibility in regard to picking, packing and drawing to market.

Plums a Glut.

In some parts of the district plums were scarcely worth picking. In common with other sections large quantities of plums were allowed to rot for want of a market. Yet we believe that if the producer could have known where to send them that fair prices could have been obtained. The distribution of our fruit crop is of vital importance. At several of the Farmers' Institute meetings fruit growing was discussed, fruit institutes were held in several sections, and quite a lively interest shown.

In his orchard, near Oshawa, last year, Mr. Lick had a large crop of fine apples—about 2,100 barrels in all, of No. 1 and No. 2 fruit. He also handled 700 barrels outside of his orchard, packing most of them himself. Altogether Mr. Lick marketed over 1,600 barrels and 3,200 boxes of apples. For fall shipped previous to November 1st satisfactory returns have been received. Most of the fruit went to Manchester.

Lincoln, Niagara, Welland, Haldimand and Monk.

(Division No. 8.)

Represented by E. Morris, Fonthill.

I have to report that the fruit crop this season has been the most abundant of any year in the history of the Niagara District. Following a large crop of last year, under ordinary circumstances we should have expected only a moderate yield of the large fruits, but owing to freedom from storms during May all blossoms developed fruit, particularly plums, peaches and cherries, the former being more than the market could take.

Plum Pulp.

In view of the possibility of another such glut, I would like to draw the attention of the society to the fact that there are thousands of tons of plums being shipped annually from Germany and other European countries, to England in the form of pulp to be manufactured into jam. I

would suggest that steps be taken to ask for a grant from the Government to experiment along this line.

Various Fruits.

The peaches sold at very low prices, but the crop being large, it proved fairly remunerative to the growers. The cherries were a very large crop and sold proportionately higher in the market than any other fruit. The pears were a medium crop and prices were fair. Apples, above the average crop and unusually free from scab and other fungus diseases, proved a very profitable crop, and added considerably to the bank account of the farmers. All small fruits were the greatest crop known, although there was great loss from too much rain during picking season for strawberries and raspberries. However, the market price was good. The township of Pelham easily led in quantity of small fruit grown. One grower, Mr. Albert Railton, shipped 375 tons and realized a net profit of \$3,000.

Orchard Meetings.

I recommended last year that we should have some orchard meetings in the central and southern portion of the Niagara district. There has never been a meeting of that kind held in the section in Ontario where such meetings are most needed and where the people would highly appreciate them. I therefore request that meetings be held in that section.

Elgin, Brant, Oxford and Norfolk.

(District No. 9.)

Represented by J. S. Scarf, Woodstock.

The year which has just closed has not been quite as favorable to the fruit growers in this district as was anticipated in the earlier part of the spring. The season opened with great promises of a very large crop of fruit, and just about the time the buds were bursting there came a cold wave with heavy rains, lasting for several days. This, no doubt, was the cause of a light set of the apples; notwithstanding this, the apple crop was a fairly good one. In many places the quality was exceptionally fine, but in a number of places the apples were attacked by a scab. The Northern Spy was a good sample and a good crop; the Greenings rather light crop, and the Baldwins were good. Owing to the very great scarcity of barrels and boxes a large quantity of the apples were not picked, but were left on the trees and ground to rot.

The pear crop was a little under the average, and in many places badly affected with the scab, the Kiefer and Bartlett being badly stung. The plums were a very heavy crop, but rotted badly. Cherries were a light crop, the buds in the spring failed to come out well, but the quality was very good. The raspberries did well, and were a heavy crop, as also were the black berries, but the peaches were not as good as last year.

The Woodstock Horticultural Society.

With regard to our local Horticultural Society in the city of Woodstock, it is doing good work, continuing on the same lines as last year in distributing shrubs, plants, bulbs and trees to its members, also to the scholars of the public schools. During the year the society distributed to the members 90 Hydrangea (*Paniculata grandiflora*) as premiums from the Fruit Growers' Association and from the local society, 185 rose bushes, 32 peach trees, 33 cherry trees, 66 currant bushes, 575 Gladioli bulbs, 100 Cannas, 46 Caladiums and 2,826 tulip bulbs. To the scholars of the schools 300 geraniums and 64 boxes of annuals, also tulips to the children, who made an exhibit of flowers at the fall exhibition of the Horticultural Society.

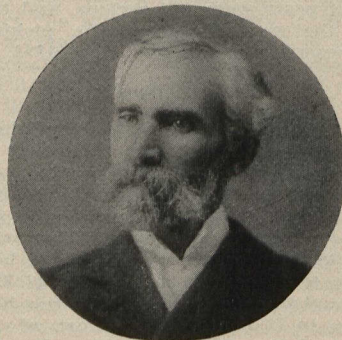
Monthly Meetings.

The society continues to hold regular monthly meetings, and some very interesting papers are read at some of these meetings from the members. The visit we had in April from Mr. T. H. Race, of Mitchell, who was sent by this association, was very much appreciated by those who heard him. Mr. Race's address was on "Roses and Their Culture," and was of unusual interest to the large number who turned out to hear him. It was said to be the best lecture on horticulture that the society had ever listened to.

Perth, Middlesex and City of London.

(Division No. 11.)

Represented by T. H. Race, Mitchell.



T. H. RACE,

A Director of the O.F.G.A.; Chairman of the Floricultural Section of our Annual Meeting at Leamington, Ont.

The only work worthy of notice done in this district during the year just passed has been in connection with the horticultural societies. There has been very little orchard planting done, not enough, in my opinion, in view of what the near future promises in the way of a demand for good fruit. Generally speaking, there has been little spraying done, and a few varieties subject to spot have been badly disfigured. On the whole there has been a fair crop of winter apples, especially Spys, and they

have been comparatively clean and well developed.

The Fruit Marks Act.

It is gratifying to note that a respect for the Fruit Marks Act is becoming more and more manifest, and its requirements have been well observed this fall. But while the farmers are accepting the Act and approving its claims and purposes, they are, with a few exceptions, not applying themselves to the requirements of their orchards to turn the Act to good account. Those few exceptions, however, when the orchard has been properly cared for, are sure in time to exemplify the influences of the schoolmaster in the community. A few farmers I know of have made their orchards pay this fall, and their example and experience must gradually work upon their neighbors. If not, then our labor is all in vain.

The London Society.

In horticultural work the success of the London society has been most marked. At the Western Fair, held in that city in September, the special floral display made by that society was one of the greatest attractions in the horticultural building. All the annuals shown in that splendid exhibit were grown from seed distributed by the society, and the flowers were contributed by the members gratuitously. The general admiration of the public seemed to be a sufficient reward for the labor expended.

In the city of Stratford they have also a live and active society, which I regret to say is not in affiliation with us. They are doing excellent work in giving prizes for the best kept lawn and the best flower and vegetable garden. In the latter part of August they held a flower show, which was a splendid success, and left them a considerable surplus in cash after paying prizes and all expenses.

The Mitchell Horticultural Society.

In my own town, Mitchell, we have a society with a membership of about one hundred. Of course I consider it the best and most enthusiastic in the province. Any meeting held under its auspices is sure to have a crowded house. Last spring we distributed nearly thirty dollars' worth of plants and gladioli bulbs, and this fall about sixty dollars' worth of Parrot tulips and mixed hyacinths. The work is showing itself very conspicuous throughout the town, in school grounds, church grounds, and especially about the homes. The infection, in fact, is being caught by many of the farmers, and the result is telling in the surroundings of many of the best farm homes.

Essex, Kent and Lambton.

(Division No. 12.)

Represented by J. L. Hilborn, Leamington.

In the district which I represent there are a number of horticultural societies, and they are doing a very good work, but there is not as much interest manifested in them as there should be.

The greatest difficulty appears to be that many fruit growers and horticulturists are not sufficiently alive to the advantages to be gained by diligently attending meetings and co-operating for the advancement of our calling.

The Transportation Grievance.

One of the most importance meetings held in this district was called at Kingsville in March for the purpose of discussing transportation grievance. There was a large gathering of fruit shippers, Mr. M. K. Cowan, M. P., occupied the chair and displayed considerable interest in the welfare of the shippers. The express companies were represented by their road agents, also by Mr. Sparling, superintendent of the Canadian company. As a result of this meeting we get much better service this season, but undoubtedly the express rate on fruit is more than it should be, especially to certain points.

The Mersea Agricultural Society hold their fall fair at Leamington and manifest considerable interest in the fruit department, and annually have a fine display of fruits, in which much interest is taken and considerable information is gained by the different exhibitors, and the public generally, in regard to the best varieties to grow, and in the proper naming of odd and new varieties. I have for several years assisted in the judging of this department and correcting names where wrong.

The Fruit Crop.

The fruit crop of 1903 was a bountiful one, but prices as a rule were rather low. Strawberries were an immense crop, especially in Lambton county. Plums were a great crop everywhere, and so cheap that some of them were never gathered, as there seemed to be no sale for them. It appears to be that there should be sale for so good a fruit as the plum if properly canned or jammed and put upon the proper market. Perhaps there is room for the O. F. G. A. to do some good work along this line of investigating this matter and encouraging canners to handle more plums when they become so cheap, and thereby prevent a total glut in our markets.

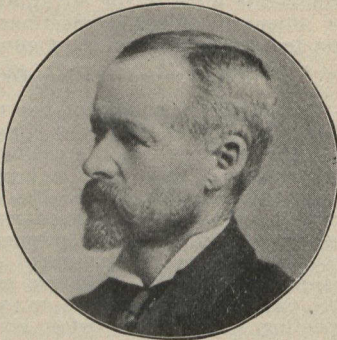
Peaches as a rule were a heavy crop, the exception being when varieties that are susceptible to the curl leaf were not properly sprayed, and Crawford varieties that were growing on soils too sandy to be well adapted for them. Owing to so much wet weather during the ripening period of peaches and plums there was considerable waste from rot. The flavor and keeping quality of peaches especially was much affected by the same cause.

Apples yielded well, but the fruit was much affected by the ravages of scab and codling moth. There should be much more attention given to the spraying of our apple orchards. Much good work is being done by the Farmers' Institute in the way of impressing growers with the importance of more thorough pruning and spraying of their orchards, but there is still room for much missionary work along those lines.

(Division No. 13.)

Represented by G. C. Caston, Craighurst.

Mr. Caston is a past president of the Ontario Fruit Growers' Association, and has charge of the Fruit Experiment Station in Simcoe county. He is one of the oldest institute workers, and is well and favorably known in this capacity throughout the province. In addition to the subject of fruit, Mr. Caston is prepared to discuss cold storage and transportation; also the marketing of farm products. He has probably done as much as any other man to introduce hardy fruits suitable to our northern climate.



G. C. CASTON.

In the district comprising this division the present year has been a favorable one for most varieties of fruit. Strawberries, although somewhat injured by drought, were a fairly good crop. Raspberries, although not so good as in 1902, were yet an average crop.

Two Good Blackberries.

The blackberry has not been grown commercially in our district, with the exception of my own plantation I know of none being grown in a commercial way, and the reason is not far to seek. Nursery agents have been selling varieties that were not suited to the climatic conditions of the district; they would grow well in summer but would lose nearly all the bearing wood during the winter, and consequently this fruit has been neglected. After a trial of some twenty varieties I have found two that exactly suit our conditions, the Eldorado and Agawam, both of good size and quality, and produce magnificent crops, so that I have found them to be one of the most profitable of the small fruits.

• Various Fruits.

The cherries were the next thing to a failure this year, and plums, though plentiful and correspondingly cheap in the district near and around the Georgian Bay, were further inland only a very moderate yield. Pears, which are not extensively grown as yet, were very good in quality. Apples were good in both quality and quantity. That universal favorite, the Northern Spy, was more than usually prolific this year and the quality very fine. One mistake

that has been made in our district is the planting of too many fall apples and of too many varieties. Realizing this, planters are now confining their planting to winter varieties only, and only a few varieties of these. Some, acting on advice from experienced growers, are taking the better plan of planting Talman Sweets and other hardy varieties for the purpose of top-grafting them with the best winter sorts for commercial purposes, the chief of which is the Spy.

An increased interest is being taken in the growing of orchard fruits. As an instance of this, the Board of Trade of the town of Orillia asked the Department of Agriculture to send some one to investigate the capabilities of that immediate locality for the production of commercial apples. As a result of this action Messrs. Creelman and McNeill were sent to that place in the early part of the summer, and I believe their investigation proved that the best commercial varieties can be grown successfully there, more especially by the system of top-grafting on hardy stock.

My district is a very large one, reaching from Lake Simcoe to the Lake of the Woods, larger than all the others put together, and I am pleased to say that apples are being grown away north of that district of Algoma where it was not thought possible a few years ago. On Joseph's and Manitoulin Islands, and in several places on the northern shore of Lake Huron, and even on Lake Superior, some of the hardy varieties are being grown. And I believe that there is a strip of country reaching the whole length of the north shore of Lake Huron, to Garden River, a few miles wide, that will grow a great many of the varieties that we are growing in the more southerly sections.

As a result of a meeting held in Toronto of the Board of Control and Experimenters, a move has been made toward having more experiments in fruit growing conducted in New Ontario, chiefly in the Temiscaming country.

Orchard Meetings.

I attended a number of orchard meetings in our district, in company with Mr. McNeill, in April. There were properly advertised, were well attended, and an interest manifested that will, I hope, lead to some practical and profitable results. Mr. McNeill explained very fully at each meeting the commercial side of fruit growing, and we hope that co-operative marketing will be one of the features of the future of the industry in our section.

News from Fruit Growers' Associations, Horticultural and Civic Improvement Societies

Good Work Being Done by Fruit Growers of the Niagara Peninsula

WE are indebted to our worthy president, Mr. W. H. Bunting, for the following notes:

Several meetings of a somewhat important character in connection with the Niagara Peninsula United Fruit Growers' Association have been held during the past few weeks, and matters of considerable interest, not only to local fruit growers, but also to the fruit trade generally throughout the province have been discussed. The election of officers took place on December 18th, resulting in the appointment of Mr. C. M. Honsberger, of Jordan, as president, and Mr. C. E. Fisher, of St. Catharines, County Registrar, as secretary, with an executive committee representing the various localities throughout the entire district. This association has been active in the past as an organization closely identified with every movement that gave promise of results beneficial to the fruit industry, and has succeeded in accomplishing some good work.

The meetings on December 18th and January 2nd, 1904, which were largely attended, were chiefly devoted to a discussion of the present condition of the San Jose infestation, and the best methods to be adopted during the next few months in order to destroy the present infestation and prevent further spread. The San Jose scale committees reported satisfactory work in many orchards with the lime and sulphur treatment, and stated that upon apple, pear, and European plum trees crude petroleum had been used with good results. The preparation popularly known as McBain's mix-

ture, was referred to as very promising, with a suggestion that growers give it a more extensive trial this spring.

It was felt that spraying outfits of greater power and capacity were urgently needed. A resolution was passed requesting the Minister of Agriculture to continue further efforts and financial assistance to abate this pest, which in many instances has proved even more destructive than was at first anticipated.

At the meeting of January 16th, also largely attended, the questions of farm labor and co-operation amongst fruit growers were discussed. The secretary was authorized to place an advertisement in several of the Scottish newspapers asking for good competent farm laborers with and without families, and members were requested to make known their requirements in this district to the secretary as soon as possible. A very lively discussion ensued upon the report of the Committee on Co-operation, which contained a number of important clauses, the chief of which referring to co-operative spraying, uniform grading and packing of fruit in central packing houses, regulation of the distribution of shipments, and the recovery of damages for loss arising out of the carelessness and negligence of carriers and receivers. This subject will be more fully discussed at subsequent meetings, and it is expected that action will be taken of great importance to the fruit trade.

New York State Fruit Growers' annual meeting was held at Geneva, N. Y., January 6th and 7th. A large number of prominent growers from all parts of the state were in attendance. The chief speakers were Profs. Bailey and Slingerland, of Cornell Univer-

sity; Dr. Jordan, director N. Y. Exp. Station; Mr. J. H. Hale, of Connecticut, the Georgia "peach king," and Messrs. A. N. Brown, of Delaware, and C. H. Powell, Washington. Economic and Commercial Fruit Growing were the chief topics discussed. A most extensive exhibit of fruit and apparatus used in fruit culture was held in the city armories. Hon. T. L. Wilson, of Hall's Corners, was re-elected president. Ontario Horticulture was represented by Mr. W. H. Bunting, president of our Provincial Association, and Mr. Jas. Tweddle, of Fruitland. These gentlemen were cordially received and were given an opportunity to tender the greetings of the provincial and local associations to the New York State organization.

London Horticultural Society

THE Directors of the London Horticultural Society have much pleasure in presenting their fourth annual report.

During the year 1903 they have had eight meetings for the transaction of the business of the society, in addition to the annual general meeting in January. No public lectures under the auspices of the society have been given this year.

Owing to the peculiar weather in the early part of the season, causing great irregularity in the blooming of flowers, no spring flower show was held. Two very successful shows were given during the summer months in the City Hall, which was kindly placed at the disposal of the society by the Mayor and City Council.

The first show was held on the 17th and 18th of June, when an excellent exhibit was made. The display of roses, owing to the unfavorable season, was not as good as in former years, but the deficiency was made up by a variety of other flowers. Mention may be made of the collection of perennial blooms by Mr. J. B. Bond, peonies by Mr.

George Prichard, early flowering perennial phlox by Mr. C. J. Fox and Mr. R. W. Renne, Canterbury bells by Mr. H. W. Givens, Columbines by Mr. C. P. Butler and others, and roses by Mr. John Stephenson and Mr. C. W. Furness.

The second show was held on the 12th and 13th of August, and was considered to be, in many respects, the best that the society has yet given. The number of contributors was larger, and the flowers exhibited represented a much greater variety of species than ever before, while the individual blooms were of a higher standard of excellence. It is satisfactory to find that these shows are improving the popular taste and developing a greater interest in the production of rare and choice varieties. The pleasant rivalry between our amateurs, for which these shows afford a friendly opportunity, is of much benefit to those who take part in it, and encourages others to aim at a higher standard in their flower gardens than was hitherto thought possible.

At the August show there were more than forty contributors, among whom it was satisfactory to find a number of new names. It was estimated that the number of bottles containing flowers on the tables exceeded 1,300, and the committee in charge found much difficulty on the second day in providing room for the contributions. Among so many exhibitors, whose products were all of such high quality, it is not possible to select individuals for special mention, the Directors can only express in general terms the gratification that was afforded not only to them but to the citizens at large. The attendance was greater than ever before, and all who came were delighted with the beauty and variety of the blooms that were set before them.

A collective display of autumn flowers was again made by members of the society at the annual exhibition of the Western Fair

during the week beginning September 14th. The tall trophy erected in the middle of the Horticultural Hall, with its several stages covered with rare and beautiful flowers, was a great attraction to the throngs of visitors, and received abundant praise from florists who had come from other parts of the country. One visitor stated that this was "one of the most attractive departments of the Western Fair this year, and the artistic arrangement of fruit and flowers, together in the Horticultural Hall was an object lesson of real value."

During the year the customary distributions of bulbs were made to the members of the society. In the spring half a dozen of Groff's famous Gladioli and some Montbretias were given, together with several roots of a choice Oxalis, the generous gift of Mr. J. A. Balkwill. In the autumn each member received seven bulbs of the Paper-white and twelve of the Princeps Narcissus, and in addition several Daffodils, the kind gift of Miss Burris. One of the plants offered as premiums by the Ontario Fruit Growers' Association was also given to each member, together with the monthly issues of its magazine, *The Canadian Horticulturist*.

At the request of the directors, Mr. R. W. Rennie attended as their representative a meeting held in Toronto on the 13th of February, for the purpose of organizing a Provincial Civic Improvement Society. The meeting was well attended by delegates from all parts of the country, and resulted in the formation of a league with an influential list of officers.

On the 28th of August a meeting was held in the City Hall here for the purpose of organizing a local Civic Improvement Society. Mayor Beck acted as chairman, and after a full discussion it was decided to form the society, and a committee was appointed to draft a constitution and to submit a list of proposed officers. At a subsequent meet-

ing the committee accomplished the first part of their task, but nothing has as yet been done regarding the election of officers and the actual formation of the society. About fifty persons, including many ladies, have entered their names as members and paid their subscriptions of a dollar each for the year 1904. There ought, therefore, to be no difficulty in launching the society at once and placing it in a position to begin active operations forthwith. The Directors of the London Horticultural Society are in full sympathy with the movement, and many of them have already shown a warm interest in the undertaking. They anticipate a hearty co-operation on the part of all our members.

The Mayor of the city, Mr. Adam Beck, repeated this year his generous gift of \$100 to be awarded in prizes in a garden competition. This amount was supplemented by a grant of \$50 from the City Council, and the judges were thus enabled to offer a larger number of prizes and to increase the variety of awards. The competition throughout the city was well maintained, and the results were very pleasing, not only in the care and improvement of their own premises by those competing, but also in the effect upon their neighbors and the general interest excited.

The Directors and the members of the society in general have every reason to feel pleased with the good work that they have accomplished during the four years of its existence. It is much to be hoped that there will be no diminution of energy during the coming year, and that all will unite in the effort to improve our city and to encourage all its inhabitants to make the surroundings of their dwellings and their places of work and business as wholesome and attractive as possible. Much has already been done, but there is still plenty of room for improvement and ample scope for both individual and united effort.

The treasurer's report, about to be submitted, shows a satisfactory balance on hand, which will enable payment to be made at once for the publication procured for the members.

CHARLES J. S. BETHUNE, Pres.
R. W. RENNIE, Sec.-Treas.

The election of officers for 1904 resulted in the choice of Mr. C. J. Fox for president; W. H. Hamilton, 1st vice-president; E. J. Liddicoat, 2nd vice-president; Mr. R. W. Rennie was subsequently re-appointed secretary-treasurer by the directors.

Kincardine Horticultural Society

List of officers of Kincardine Horticultural Society for 1904:

President—Wm. Welsh, gentleman.
1st Vice-President—M. McCreath, cemetery sexton.
2nd Vice-President—R. D. Hall, gentleman.
Secretary—Joseph Barker, Div. Court clerk.
Treasurer—Joseph Barker, Div. Court Clerk.
Directors—Archie Clinton, gentleman; D. S. McDonald, fruit grower; S. W. Perry, Principal High School; E. Miller, cabinet maker; W. G. Tuck, laborer; Rev. Joseph Philp, Methodist minister; Rev. A. Pomeroy, Methodist minister; Dr. Geo. McKay, retired minister; Joseph Abell, florist.
Auditors—John H. Scougall, town clerk; Edward Fox, jeweller.

SWINE IN ORCHARDS

WHILE many orchardists do not believe in having stock of any kind in their orchards, there are others who find it profitable under certain conditions. If the orchard needs additional food, and most bearing orchards do, the plan of keeping swine or sheep in them is not a bad one provided the arrangement is so planned that the presence of the stock does not in any way work injury to the trees or to the soil. If swine are to be kept in the bearing orchard the ground should be prepared for some such crop as sorghum, clover and rye or any similar crop which will serve as grazing for

the animals and add fertility to the soil through their excrement.

On this plan one will help the orchard, but if the hogs are turned into an orchard that is in grass with an idea of increasing the value of the animals by what they may get in grazing, it will not require many seasons of this sort of work before there will be decided injury done to the trees. If an orchard is worth anything at all it is worth caring for in itself and should not be used as an adjunct to the hog pen or the sheep pen unless the animals will more than pay back to the trees through the soil all they take from them.—*Mail-Empire*.

A CANNING FACTORY

THE proposed canning factory for the Leamington district is likely to be an assured fact, as a large part of the \$10,000 has already been subscribed. The Leamington News says:

"Our fruit crop will increase, and when the peach orchards planted to replace those frozen out five years ago come in bearing we shall not know where to find a market for our output. South Essex is the very

garden of Ontario, and where so much is produced—so perishable, and withal, so delicious—the only sensible thing to do is to do it up in such a way that it can be marketed at any season of the year. A factory where the stock is held by local people will never sell out to a combine, but will always be a blessing to the community. It will not be closed at the dictation of anybody or its output restricted in any way."

flower Garden and Lawn

WINTER WINDOW GARDENING

AN ADDRESS BY WM. HUNT, ONTARIO AGRICULTURAL COLLEGE, GUELPH.



FIG. 2732. GERANIUM, PETER HENDERSON.

THE most important feature necessary for success in window gardening is the window itself. A window in a bright sunny position, where a temperature of about 50 to 55 degrees can be maintained at night, with a day temperature of from 60 to 70 degrees, will furnish the most desirable surroundings in which to grow successfully a collection of window plants in

Many plants can, however, be grown under less favorable circumstances. Ferns, selaginellas or exotic mosses; aspidistras, ficus elastica or rubber plant, cyperus alternifolia (umbrella plant), or even the arum or calla lily, as it is usually termed, are some of the plants that can be grown in windows having a more northerly aspect, where the direct rays of the sun never reaches in winter time. But for flowering plants a more

southerly aspect is necessary to secure good flowering results; a window facing the southeast being perhaps preferable, as it escapes the direct rays of the sun at noon that perhaps even in winter time strikes much too warm in a south window for the well being of many window plants. It is desirable on very bright days, especially in late winter or early spring, to shade plants in windows having a southerly aspect, by pulling down the blinds or by partially closing the shutters for an hour or two during the hottest part of the day.

A very high temperature at midday, and perhaps an equally low temperature at night, is not beneficial to the growth of plants, and often induces an attack of insect pests, or of disease, that proves disastrous to a whole collection of plants. An ordinary equable house temperature, such as I first mentioned, with as moist an atmosphere as possible maintained around and about the plants, will be found the most desirable conditions for the successful winter culture of window plants.

To secure the last mentioned condition in ordinary windows is often a difficult problem, as the surroundings are not adapted for using much water around and about the plants. Very much can, however, be done by spraying or sprinkling the foliage of the plants on fine sunny days, more especially the smooth or glossy leaved varieties; or by sponging the leaves of these with a sponge and some clear tepid water. About once in every two weeks will suffice for this sponging or sprinkling. The plants may, perhaps, be removed to the kitchen sink occasionally, where no damage can be done the surroundings by sprinkling.

Hirsute or hairy leaved plants should not be sponged at all, Rex begonias objecting most decidedly to this proceeding. Geraniums, heliotrope, coleus, etc., do not require much, if any, syringing or dampening of the foliage; whilst calla lilies, fuchsias, roses, rubber plants, cordylines and other smooth foliage plants delight in a sprinkle or sponging with clear water very frequently. Always choose a sunny, warm day for this operation, and at a time when the thermometer registers about 65 degrees in the window, or wherever the operation of sponging or syringing is performed.

Much might be said as to the construction and planning of a suitable window and fittings, in which a collection of window plants could be successfully grown, but time will not permit. I feel justified, however, in saying that with the increasing interest shown by our people in the culture and growth of plants and flowers around the home, that architects and home builders might well make this matter of suitable window building a much more prominent feature in their building plans than they have hitherto done. There is no reason why even the smallest villa or cottage could not have a window so constructed that the necessary overhead light and the necessary heat could be obtained, without adding but very little additional expense to the building estimates of the residence.

WATERING PLANTS.—This is a matter that often troubles the plant grower considerably. No set rule can be given to suit all kinds of plants and their conditions, but it is always safe to give any plant that is in good growing condition a good supply of water at the roots whenever the top portion of the soil shows signs of dryness. Giving the plant a small quantity of water at stated times, or at regular intervals, is not the right method to adopt when watering plants. Ascertain first, by closely observing the top of the soil in the pot, whether the plant re-

quires water or not. If the soil appears dry give sufficient water to thoroughly moisten (not sodden) all the soil in the pot, and do not water the plant again until the soil shows signs of dryness. It may be one day, or it may be a week, or even a longer time before it requires more water, but when water is given the plant see that it gets sufficient to well moisten all the soil in the pot.

Another method of ascertaining whether pot plants require water is to tap slightly the side of the pot with the knuckles. If the pot, when struck, emits a ringing sound, the plant requires water. If, on the contrary, only a dull thud-like sound is given out when the pot is tapped, water had better be withheld from the plant for a short time.

Over-watering, over-potting, and insufficient drainage are often the main cause of failure in the culture of window plants. Over-potting is a term used when a plant is potted into a pot two or three sizes larger than the plant requires.

For drainage in pots there is nothing better than small pieces of broken flower pots. About an inch in depth of broken pot can be usually used for six inch pots and larger sizes, whilst half that quantity can be used for smaller sized pots than four inches. Use small pieces of broken pot for the small pots, half an inch square being a good average, whilst larger pieces should be used for the larger sized pots. Coal cinders or coarse gravel can also be used for drainage, but they are more liable to clog and choke than broken pieces of pot.

This matter of drainage is one of the most essential points necessary to success with almost all pot plants, more especially window plants.

The insect pests that are all too common in house and window plants, have been very ably described to you by Dr. Fletcher, as well as preventives and remedies recommended for the attacks of these troublesome and destructive visitors, so that it is not

necessary for me to speak on this matter. Suffice it to say that much can be done to prevent the attacks of insect pests by endeavoring to give window plants as early as possible the conditions I have mentioned, as extremes of heat drought or moisture are the main inducements for insects or disease to attack plant life at any time.

To succeed with a collection, or even a few window plants, they must be closely watched, always keeping in mind the old adage, "that an ounce of prevention is better than a pound of cure."

To secure a bright, healthy looking window of plants during the winter, it is necessary to commence preparations during the preceding summer and autumn months. It is useless and unnatural to expect plants that have been doing duty as decorative plants on the lawn or in the flower border all the summer to continue in their brightness and beauty in the winter as well. Plant life of all kinds demands more or less of a resting period at some season of the year, no matter whether they are plants from a tropical or a more temperate zone. The all enduring geranium even will not meet the exacting demands for continuous flowering that is sometimes made on it by plant lovers. If geraniums are wanted for the window in winter and give good results, they must be grown during the summer especially for that purpose. By striking a few cuttings early in the summer and growing them on in pots out of doors, nice plants can be had by autumn to take into the house. Or small plants at planting out time in early June, potted into six or seven inch pots, and the pots plunged to the rim in the ground until fall, will make nice plants for the window in winter. The tips of the growth should be pinched back until August, and all bloom buds, as soon as they are seen, kept pinched back until September. By plunging the pots in the ground they require less water

and make better plants than if they are left standing above the ground.

Many so called "spring flowering" bulbs make ideal pot plants for the window in winter; in fact, I know of no class of plants that give such good results with so little skill and care required to bring them to perfection. The one great point to be gained to be thoroughly successful in growing these bulbs is to secure a good root growth before top growth commences. The only way to do this is to give the bulbs, as nearly as possible, the same conditions for a time as they receive when planted in the open ground.

By potting a few of the various kinds of bulbs suitable for pot culture, at intervals from the end of August to early in December, and burying the pots in coal ashes, sand or light soil a few inches deep, for a month or six weeks or even longer, a good supply of roots will be obtained, when the pots can be brought in at intervals to the window as required. When the bulbs are first planted the soil should be thoroughly watered. If well packed and covered with ashes, etc., as before mentioned, they will require no more water until they are brought out into the window. After this the soil must never be allowed to become quite dry in the pot. A damp, cool place suits bulbs best to make roots in.

Roman hyacinths can be potted in September and plunged out of doors until October, when they will be ready for bringing into the window as required. There is no bulb that will give more satisfaction than the Roman hyacinth, the white variety being preferable if treated as I have described, as they give such a plentiful supply of their sweet scented, waxy white flowers in return for the small amount of care they require, and besides they are not very particular about the kind of soil they grow in, provided it is not of too heavy a nature. This remark as regards soil will apply to almost any kinds of bulbs used for pot culture.

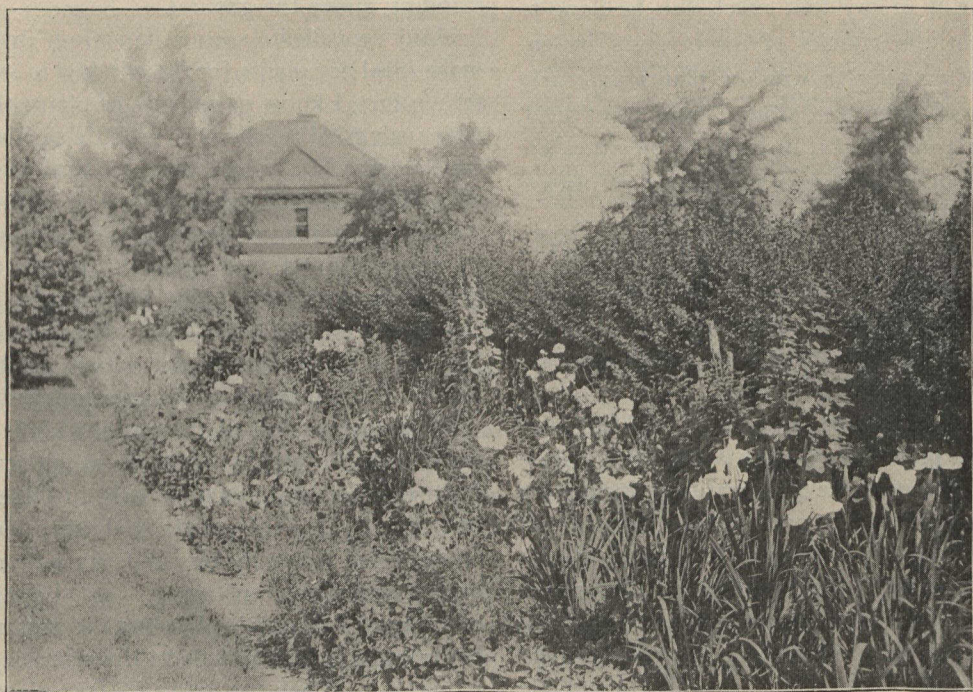


FIG. 2733. PERENNIAL BORDER AT THE EXPERIMENTAL FARM, OTTAWA.

A PERENNIAL BORDER

BY W. T. MACOUN, HORTICULTURIST, EXPERIMENTAL FARM, OTTAWA.

At the Central Experimental Farm, Ottawa, there are more than 1,700 species and varieties of herbaceous perennials. As there is only a limited number of these which can be recommended for general planting, the writer has endeavored to bring the best varieties into a comparatively small area, in order that they may be more easily examined and studied. A border near the house about 150 feet long by 9 feet wide serves the purpose nicely, a background of purple leaved Barberry hedge adding much to the effectiveness of the flowers. The accompanying photo, taken by Mr. Frank T. Shutt, gives some idea of the appearance of the border. The perennials are arranged as far as possible to keep up a succession of

bloom from early spring until late autumn. Between the clumps of perennials are small clumps of tulips and narcissi, which make the border very gay during part of April and May. Scattered all through the border are Iceland poppies, which begin to bloom in May and continue until July. In July and August the Shirley poppies, which are also scattered through the border, keep up the show. There are also a large number of clumps of Cashmerian Larkspur, which produce a fine effect in late summer. The plan is to both keep up a succession of bloom throughout the summer and to have plenty of blooms, and this is well maintained by the present arrangement.

THE CHRYSANTHEMUM

BY H. L. HUTT, B.S.A., ONTARIO AGRICULTURAL COLLEGE, GUELPH.

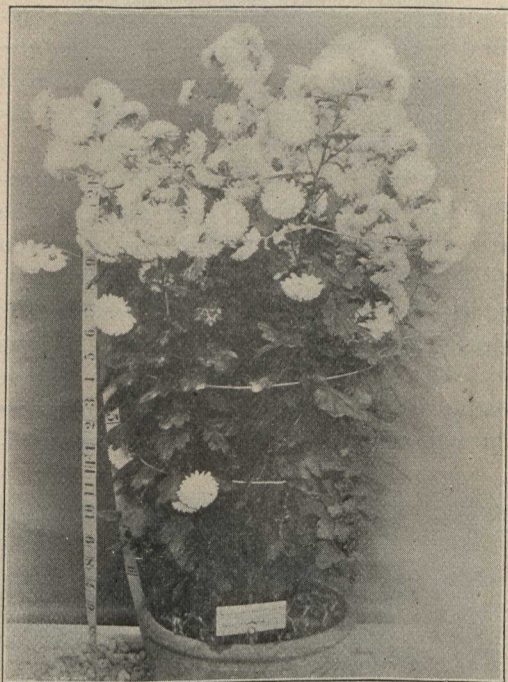


FIG. 2734. CHRYSANTHEMUM—ROSE TRAVENA.

THE chrysanthemum, or "Mum," as she has been rudely nicknamed, has been justly called by one writer "The Autumn Queen," and by another "The Star-eyed Daughter of the Fall." Coming into bloom in the month of November when all nature in our northern clime seems to be in its most sorrowful mood, I sometimes think this grand flower has been given as a compensation for the loss of summer friends, and to help us to be bright and cheerful at the Thanksgiving season.

That increased attention which is being yearly paid to its cultivation shows that its popularity must be based upon real merit. One writer has said that "the transcendent merit of the chrysanthemum lies in its almost limitless variety of form, texture and

color of flowers." To this I think might be added the ease with which it may be cultivated. It is not now the flower of the florist only, but it is being more generally grown throughout the country in the homes of amateurs.

ITS HISTORY.—Very little that is new can be said of its history, yet something along this line may be of interest. The chrysanthemum has had its origin from one, or perhaps two, small, single-flowered species of plants native in Eastern Asia, their nearest relatives in this country being the disreputable ox-eye daisies. For many centuries before it was introduced into Europe or America it was cultivated, improved, and brought to great perfection by the painstaking

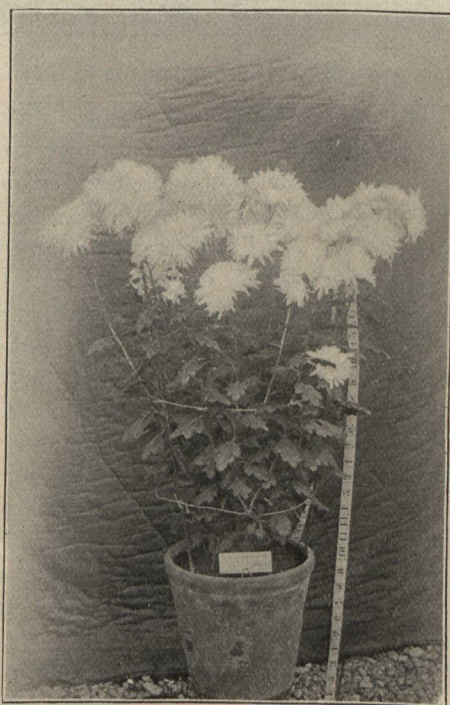


FIG. 2735. CHRYSANTHEMUM—IVORY.

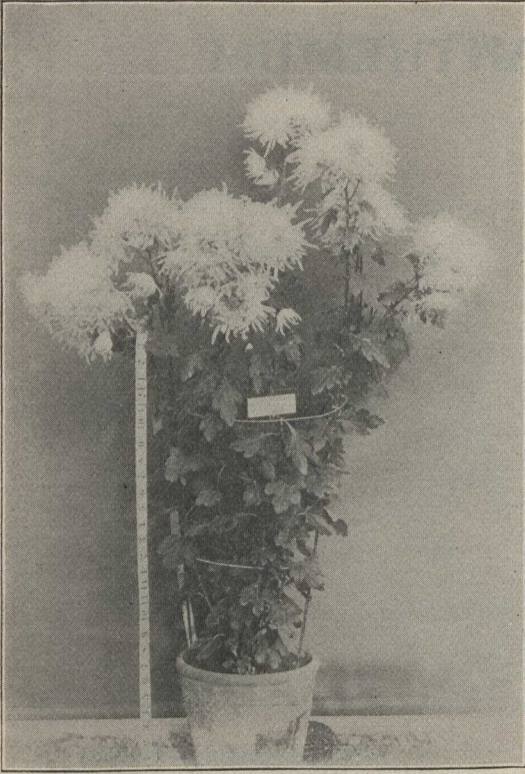


FIG. 2736. CHRYSANTHEMUM—MAUD DEAN.

ing gardeners of China and Japan. In the latter country it is the national flower, and may be seen upon all the modern Japanese coins. The "kiku," as it is there called, is also one of the crest badges of the imperial family, and is used on the official seal. On the ninth day of the ninth month it held the annual "Feast of Chrysanthemums," when, it is said, the people not only revel in the beauties of the "mum" but feast on a cold slaw made of its petals. To some unknown Dutch voyager is probably due the honor of first introducing it into Europe. This was about the end of the seventeenth century, but it was not until the second decade of the present century that the flower came into general cultivation.

The first seedling raised in Europe was in 1827, and the first chrysanthemum show held in England was at Norwich in 1829.

New varieties were from time to time brought in by the tea ships, and the list of varieties under cultivation increased each year. The first plants of the Pompon section were sent to England in 1846 by Robert Fortune, a collector for the Royal Horticultural Society, and in 1860 he introduced the first varieties of the Japanese type. From that time to the present the interest in its cultivation has steadily increased.

Just when the chrysanthemum was introduced into America we do not know, but the first chrysanthemum exhibit for prizes on this continent was held at Boston in 1861, under the auspices of the Massachusetts Horticultural Society. In 1868 it was styled a chrysanthemum show. These shows are now common annual occurrences throughout the country. The chrysanthemum

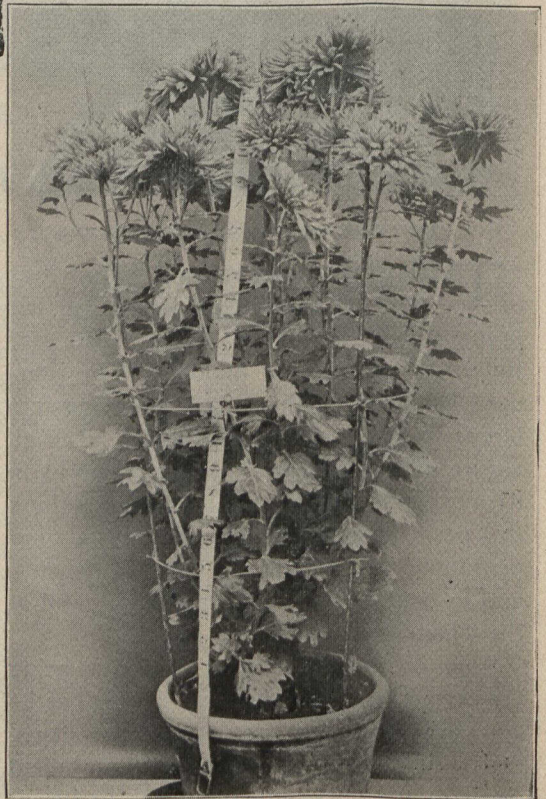


FIG. 2737. CHRYSANTHEMUM—N. H. LINCOLN.

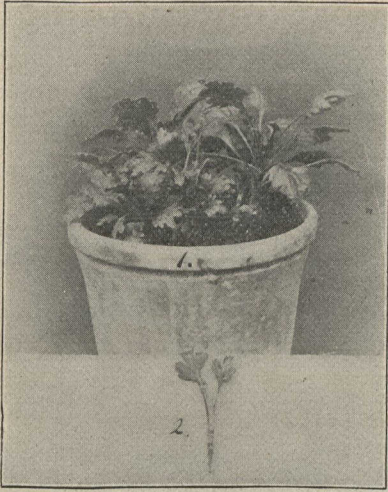


FIG. 2738. 1. Plant in suitable condition for furnishing cuttings.
2. Sample of cutting.

num show at Toronto last fall was probably the finest exhibit of its kind that has ever been held in Canada, and excellent smaller shows were held in many towns and villages throughout the province.

POSSIBILITIES OF DEVELOPMENT.—At each annual exhibition new varieties are being introduced, and something new of interest is added to the development of this “Star-eyed Daughter of the Fall.” The size has been greatly increased and the variety of shades

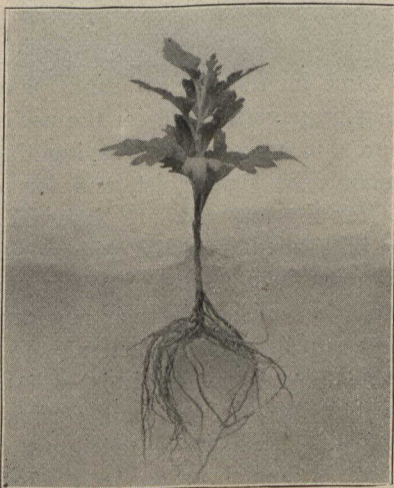


FIG. 2739. A well-rooted cutting.

of color has been multiplied. The variety which created the greatest sensation at the time of its introduction was the one named after Mrs. Alpheus Hardy, this being the first of the hairy or ciliated type, which is now represented by many excellent varieties in various shades of color. With all the new shades of color which have appeared, we have still, however, to wait for the much talked of blue chrysanthemum. How long we may have to wait is hard to tell.

What, to my mind, is most needed now in the way of improvement, is the development of constitution and strength of stem in the plant. Many of our finest varieties, in order to show their bloom, have to be supported like cripples on crutches and staked with a forest of props. When these supports can be done away with a considerable step in advance will have been made.

METHODS OF CULTURE.—Open air culture in the flower border is not altogether satisfactory in this latitude on account of the danger from early frosts, although in the southern part of the province I have frequently seen them grown in this way. The Pompon varieties, with their bright colored little button-like flowers, are the hardiest and best adapted for this purpose, as are also some of the early flowering larger varieties. Small plants may be set out as soon as danger of frost is over in the spring. They should be planted from one and a half to two feet apart, in good rich garden loam, kept well cultivated, and watered if necessary. The quality and quantity of bloom will be almost in direct proportion to the amount of attention given them.

OPEN GROUND, FOLLOWED BY POT CULTURE.—This is the method usually followed by amateurs who have not the time or conveniences for growing the plants from first to last in pots. About the last of August the plants are lifted from the beds in which they have been growing all summer and are potted in eight or ten-inch pots. This must



FIG. 2740. Chrysanthemum as first potted into three-inch pots.



FIG. 2741. 1. "Mum" in four-inch pot ready for first heading back. 2. As headed back.

be done carefully, with as little injury to the roots as possible. After potting they should be well watered, and shaded during the hottest part of the day for a week or so until the roots become established in the pots. They may then be kept out of doors and allowed to get all the sunshine possible, taken into the house as the nights become colder, and placed in bright sunny windows where their blossoms will look out and smile in contentment upon the blustering storms of November and December.

ALL SEASON POT CULTURE.—This is the method by which the best results are obtained, and as it is practiced altogether in the production of exhibition plants, and frequently also by amateurs in their home collections, I shall speak of it more fully and in detail.

PROPAGATION.—When the plants have done flowering they should be cut down to within a few inches of the soil. A forest of little shoots will spring up which may be used to start new plants. These cuttings may be taken any time from January to

May, but as a rule those taken in February or March give the best results. The cutting should be about three inches long, made with a smooth cut at the bottom just below a joint, and the lower leaves should be removed. The roots may be started by inserting the cuttings in clear, sharp, gritty sand. If but a limited number of plants are wanted they may be started singly or otherwise in small flower pots. An old bread pan with a perforated bottom and filled with about three inches of clear sand makes an excellent propagating bed for the use of the amateur. It goes without saying that the sand should be kept moist, and for a few days after the cuttings are inserted they should be shaded from the midday sun by placing over them a sheet of newspaper, but as soon as established in their new quarters the more sun they get the better.

POTTING.—As soon as it is well rooted and a few new leaves have formed, the young plant should be potted into a three-inch pot. When the roots have filled this, as may readily be seen by straddling the



FIG. 2742. "Mum" in six-inch pot, ready for second check.

stem with the fingers and tipping the plant out, it should be repotted into a pot one or two sizes larger, from which size it should be potted into a six or eight inch pot, and allowed to bloom in this, though better results are obtained by getting the plant into an eight or nine inch pot a month or two before the time of bloom. When potting into any size of pot larger than four inches, an inch or so of broken pottery, brick, or charcoal should be placed in the bottom of the pot to assist drainage.

THE SOIL.—The soil for chrysanthe-

mums, or in fact any pot growing plant, requires considerable attention. No absolute rule can be laid down as to what mixture is the best, as soils vary so much in different parts of the country. One of the chief ingredients in any mixture should be well rotted sods or turf. We prepare this by cutting the sods in the fall, piling them upside down in a large heap, with a few layers of rotting manure throughout the heap. During the following summer the heap is chopped down and turned, and when needed for potting enough sand is added to make the mixture friable so that it will not bake in the pots. A little bone meal mixed with it at this time gives good results afterwards.

WATERING.—Many amateurs are at a loss to know how to water pot-grown plants properly. One of the best rules that can be given for the guidance of such is to withhold water until the soil begins to look dry on top, then give a thorough soaking. A florist can always tell when the plants need watering by the hollow sound that the pot gives when rapped with the knuckles. The frequency with which plants need watering depends much upon the temperature and the amount of moisture in the atmosphere, as well as upon the exposure to strong sunshine. Rain or soft water is the best. Besides watering the soil it is well to occasionally syringe the foliage, or to take advantage of nature's watering by placing the plants outside during a gentle rain.

EXPOSURE TO SUNLIGHT.—Chrysanthemums revel in sunshine. There are a few plants like the Calla lily, begonia, and fuchsia which do best when not exposed to the strong midday sun, but the chrysanthemums can hardly get too much of it, provided the temperature does not get too high accordingly. When grown in a window where the light comes all from one side, the plants should be turned every day so as to keep them growing symmetrically, otherwise they are likely to turn their backs upon the house-



"Mum," grown as a tree plant.

hold and smile upon the strangers in the street.

TRAINING AND STAKING.—The method of training the chrysanthemum depends very much upon the object sought. If the grower desires to get an extra large bloom the plant should be trained to a single stem. All of the lateral buds should be pinched off as they appear and the terminal bud allowed to develop a bloom. In this way we get an immense flower, but the plant is, to say the least, top-heavy and unsightly.

The best looking specimens, both plant

and bloom considered, are grown as bush plants. To obtain a plant of this kind the terminal bud must be pinched out when the plant is five or six inches high. In a short time five or six shoots will branch out, which must also be stopped when four or five inches long, and the operation repeated upon the shoots which branch out from these until we get a bushy symmetrical plant, having plenty of good strong branches upon which the bloom will appear later on in the season. If quality rather than quantity of bloom is desired the weakest of these flower buds may be pinched out and the vigor of the plant directed into the larger buds left.

Staking will be found necessary to support the branches by the time the plants are half grown. The neatest and least conspicuous stake we have yet found for the purpose is made out of stout, corrugated steel wire, like that used for stays in wire fences. These may be painted so that they will hardly be discerned among the dark green of the foliage. We use three of these stakes to each plant, the length varying from two to four feet according to the height of the plant. Two or three hoops of much smaller wire are tied around these forming a circular trellis with the plant in the centre, keeping it in shape with as little unsightly staking as possible.

GROWING EXHIBITION PLANTS.—For the growth of large exhibition plants more care is necessary than can usually be given by the amateur, and unless he has a greenhouse it is hardly worth while attempting it. To get a standard plant, which is expected to assume tree-like proportions by October, a vigorous growing variety must be selected and started early. It must be trained to a single stem and allowed to grow to a height of from three to four feet before it is stopped. A bushy head may then be formed by repeatedly nipping back the branches at every first or second joint.

(TO BE CONTINUED.)

THE PREMIUM PLANTS AND BOOKS

EVERY subscriber sending \$1.00 membership for 1904 will receive: (1) The Canadian Horticulturist for 1904; (2) The Annual Report of the Ontario Fruit Growers' Association; (3) The Annual Report of the Entomological Society; (4) The Annual Report of the Fruit Stations; (5) A choice between the Dorothy Perkins Rose and the X X X X Gladiolus.

(1) The Dorothy Perkins, a new pedigreed climbing rose. We give the originator's account and description:

Parentage: This rose was originated from seed of the Japan variety, *Rosa Wichuriana*, hybridized with pollen from that grand old rose, *Mme. Gabriel Luizet*. The seed plant was chosen for its hardiness and vigorous habit of growth, the pollen parent for its beautiful color and remarkable freedom of bloom. The qualities of both are combined to a remarkable degree in the hybrid, which was one of a lot of two hundred seedlings hybridized in the same manner. While many of the others were of great merit, the Dorothy Perkins was the best of them all.

Hardiness. In this important point nothing more could be desired. Two unusually severe winters failed to injure the plants in the least, although during one of them the temperature went as low as 20 degrees below zero and there was not the usual snowfall to protect them.

The Flowers are of large size for this class of rose, usually about one and one-half inches across; are borne in clusters of from ten to thirty and are very double; the petals are very prettily rolled back and crinkled; the buds are remarkably pretty, being pointed in shape and of just the right size for the button hole.

The Color is a most beautiful clear shell-pink and holds a long time without fading. Even when the flowers commence to fade the color is still pleasing, being then a lovely deep rose.

In Vigor the Dorothy Perkins is a true descendant of *Rosa Wichuriana*, making in a single season strong, lusty shoots, often of ten to twelve feet in height.

In Habit of Growth it is, unlike its seed parent, decidedly upright, having, as stated by Mr. Wm. Scott, Assistant Superintendent of Horticulture at the Pan-American, exactly the habit of the now well-known *Crimson Rambler*. It is therefore especially adapted for planting as a companion rose to *Crimson Rambler*.

Fragrance. The flowers are very sweetly scented, a characteristic not possessed by most other roses of this class.

The Foliage is of a deep green, of thick leathery texture, and remains on the plant in perfect



FIG. 2744. DOROTHY PERKINS ROSE.

condition till well on into the winter, making it almost an evergreen variety.

At the Pan-American Exposition there was a bed of Dorothy Perkins roses which attracted an immense amount of attention, although the plants were young stock which had been propagated only some eighteen months before. Mr. Wm. Scott, Assistant Superintendent of Horticulture expressed in the *Florists' Review* the following unsolicited opinion regarding the variety:

"Messrs. ——— sent us last year some plants of their new Rambler rose, Dorothy Perkins. This has exactly the habit of the well-known *Crimson Rambler*. They have flowered splendidly and have been very brilliant. This seems to me to be a great acquisition, and I believe it to be a good forcing rose. The individual flower is larger than the *Crimson Rambler* with not such heavy trusses, but it is a beautiful shell-pink in color." Later on Mr. Scott wrote: "The Dorothy Perkins proved to be just as good a forcing rose as the well-known *Crimson Rambler*. Had the plants been grown on my own grounds and potted without delay they would possibly have been still better. As it was they forced well and flowered profusely."

From *Gardening Illustrated* (London); "A beautiful New Rambler Rose. We now and then get a very good novelty in the way of roses from the United States. Dorothy Perkins is the latest comer. The charming little double

shell-pink flowers as they open, remind one of the miniature Provence de Meaux, only that they are brighter and rather larger. They are produced in splendid clusters of twenty to fifty flowers. One can imagine, therefore, the effect obtained from a well developed plant. Growths are made in one season of 10 to 12 feet long. Although this new rose was raised from Rosa Wichuriana, crossed with the old H. P. rose, Mme. Gabriel Luizet, it loses the procumbent form of the seed parent, and, instead, partakes of the upright character of the Crimson Rambler, so that it is a first-rate companion of the latter."



FIG. 2745. CALLA AND EULALIA.

CALLAS

A VERY successful arrangement of potted calla lilies is shown in the accompanying cut. A florist writing to the Country Gentleman says of it:

It was a large pot containing three strong callas, and in the center a plant of zebra grass (*Eulalia japonica zebrina*, var.) The soil was rich, and during the winter a top dressing of fine manure was given it, with plenty of water. The growth was magnificent, both of the callas and the grass, which gave the whole object a particularly pleasing effect that is but too poorly expressed by a picture.

Many flowers were borne, and it continued in beauty till late in the spring, when it was planted in the garden and given a rest.

A Neglected Fruit

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Woodheap Refuse.

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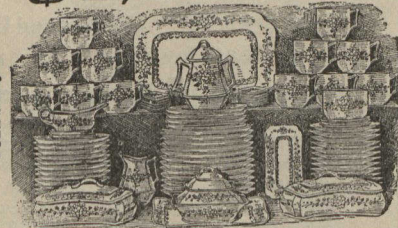
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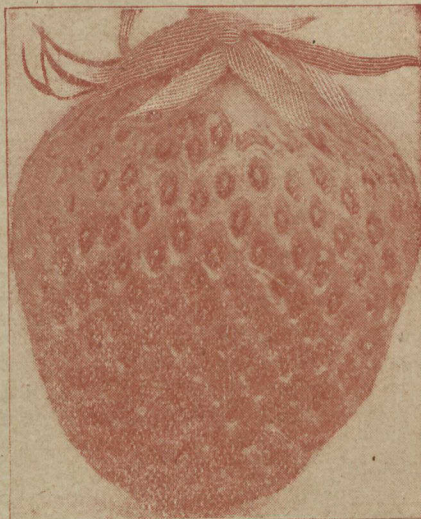
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