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THE CANADIAN HORTICULTURIST.

Special Features

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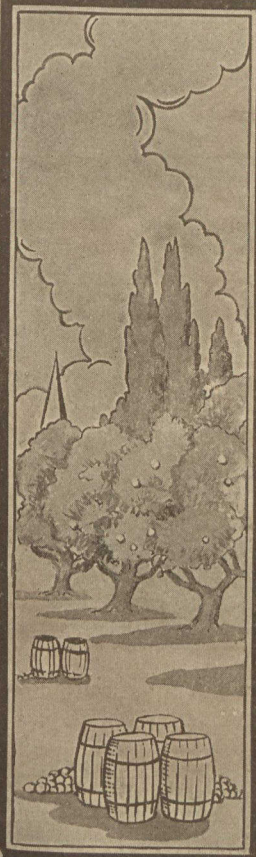
The Triumph Pear
Woodstock Fruit and Flower
Growers

Summer Treatment of San
Jose Scale

Hints to Apple Shippers
Apples in the Georgian Bay
District

A Study in Fruit Blossoms
The Little Gardeners of Ham-
ilton

November Notes



A JOURNAL
DEVOTED TO
FRUIT &
FLOWERS

EDITED
L. WOOLVERTON
BY
M.A. GRIMSBY, ONT.

PUBLISHED BY
THE ONTARIO
FRUIT GROWERS'
ASSOCIATION
TORONTO, ONT.

LANDSCAPE GARDENING

PLANS for Parks, Cemeteries, Home and School Grounds prepared by

Charles Ernest Woolverton

Landscape Gardener, Grimsby, Ont.

Surveys made and working drafts prepared on reasonable terms.

Improvements intended to be executed in the spring of 1903, should be planned out this summer or fall.

Correspondence Solicited.



Government Approval of the Spramotor.

The following extracts will show how the Spramotor is regarded by some of the leading Government officials. They have purchased the Spramotor only after making elaborate and exhaustive tests. These facts should mean something to you. Profit by the experience of others:—

ONTARIO. This is to certify that at the contest of Spraying apparatus held at Grimsby, under the auspices of the Board of Control of the Fruit Experimental Station of Ontario, in which there were eleven contestants, the Spramotor Co., of London, Ont., was AWARDED FIRST PLACE.

H. L. HUITT & M. PETIT, Judges.

Dept. of Agriculture, Toronto.

I have great pleasure in stating that the Spramotor ordered from your Company has given entire satisfaction.

JOHN DRYDEN, Minister of Agriculture.

The London Spramotor combination is the only reliable pump I know for applying mechanical mixtures.

GEORGE E. FISHER,
Chief Inspector, San Jose Scale Investigation.

Dept. of Agriculture, Ottawa.

DOMINION OF CANADA. I used your Spramotor in my apple orchard of 1600 trees. It is easy to handle and perfect in action. I never had my orchard looking cleaner than at the end of last season.

GEORGE JOHNSON.

Cattle Quarantine Station, Quebec.

I have much pleasure to inform you that the outfit bought from you for disinfecting is giving us the greatest satisfaction.

J. A. COUTURE, D.V.S., Inspector.

RUSSIA. I have the honor to apply to you for five Spramotor machines of the same size, No. 1-B, and one Spramotor Knapsack. I remain, gentlemen, Your obedient servant, NICKOLAS KRUKOFF
Representative of the Ministry of Agriculture, Russia.

Write a postal card with your address to

THE SPRAMOTOR CO.,
LONDON, ONT.

And they will send you a complete treatise on Spraying and full particulars regarding their Spraying Machines.

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If you are thinking of going to the Pacific Coast try British Columbia: No extremes of temperature. No cyclones. No dust storms. No cloud bursts. No droughts. No blizzards. Fertile land, and the heaviest crops per acre in Canada. We make this statement without fear of contradiction. The land is cheap and the markets and prices for farm produce the best on the Pacific Coast. Write for Farm pamphlet to the Settler's Association. Box 329 Vancouver, B. C. When writing please refer to this paper.

Notice to Apple Growers

We are preparing for the use of the Department of Agriculture a list of the apple growers of Ontario. Any grower can have his name placed on the list by sending his address to the Secretary together with the number of trees he has in bearing.

G. C. CREELMAN, Secretary.

COMING EVENTS.

- Ontario Fruit Growers' Association, at Walkerton, Dec. 1, 2, 3.
- Agricultural and Experimental Union, at Guelph, Dec. 8, 9.
- Provincial Winter Fair, at Guelph, Dec. 9, 10, 11, and 12.
- Western Dairymen's Association, at Brantford, Jan. 13, 14, 15.
- Eastern Dairymen's Association, at Ottawa.

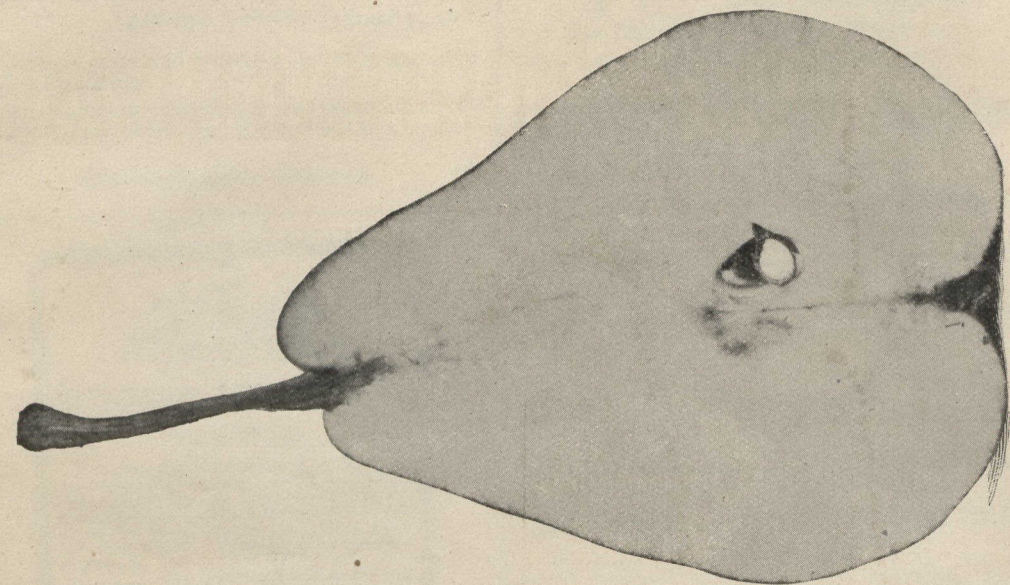
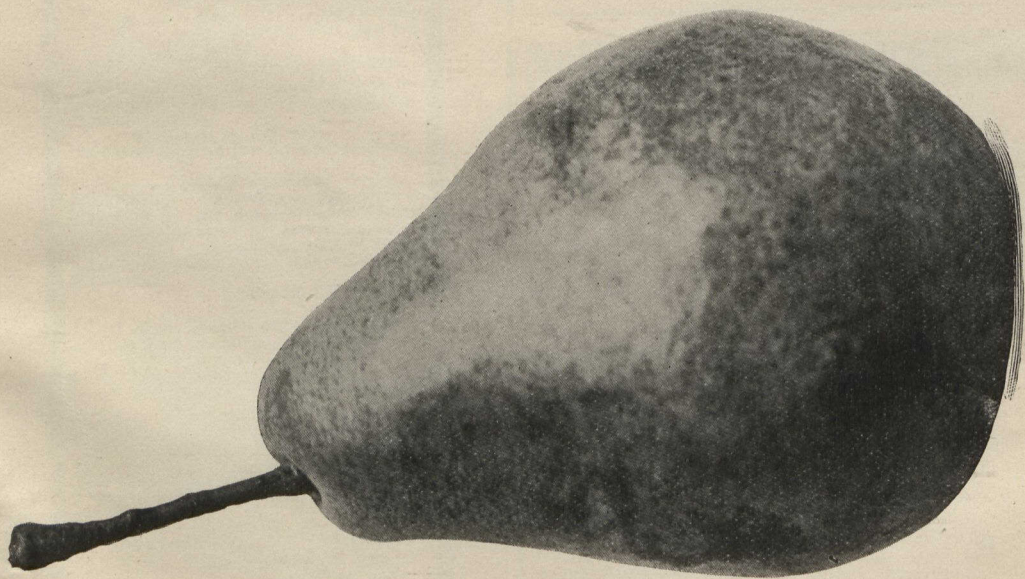


FIG. 2450. THE TRIUMPH PEAR



THE CANADIAN HORTICULTURIST

NOVEMBER, 1902

VOLUME XXV



NUMBER 11

THE TRIUMPH PEAR

(TRIOMPHE DE VIENNE.)

SOME years ago our Association sent out among its members trees of the Triomphe de Vienne pear, asking them to report on its merits. Previous to this we do not know of its being grown by any one in Ontario. The tree which was sent to the writer has now been bearing fruit at Maplehurst for several years, and we are so well pleased with it that we have made it the subject of the frontispiece for this number.

Like the Anjou, Bartlett, Duchess and many other excellent kinds, it is of French origin, but it finds in Ontario a congenial soil, and promises to be an excellent commercial variety. One point in its favor in these days when we are so given to value everything in dollars and cents, is its large size and showy appearance which would command attention in any market, but, in point of flavor, it is not equal to many other well-known kinds.

The tree appears to be a fine healthy and vigorous grower, and, considering the size of the fruit, may be said to be productive.

The flesh of this pear is creamy-white in color, buttery in texture, and rather juicy,

while the flavor is sweet and very good. In season, it is later than the Bartlett, coming in between the 15th and 30th of September. The season of maturity, however, is of less importance these days than in the days before cold storage, for by this means we can keep tender pears for many weeks after their natural season of maturity.

One of the most important questions which we can ask about a new fruit is its shipping qualities, for, if in ordinary cold storage we may, without too great risk, send a fruit to a foreign market, we may plant it with the assurance that, if our home markets become glutted by over production, as indeed they are certain to be, we may yet dispose of our products across the sea at reasonable prices.

Looking over the list of pears commended as desirable for planting in Ontario, with a view to export, we find in our experimental plot two others which seem worth adding, namely the Hoosic and the Pitmaston, the latter of which we are inclined to look upon with especial favor, and will take an early opportunity to describe for the benefit of our readers.

Mr. McLagan, of Stratford, sends us a sample of this pear grown in his garden from a tree sent him by the Ontario Fruit Growers' Association in 1891. He finds the tree healthy, vigorous and productive, and

values the fruit quite highly. We shall be pleased to hear from any other members of our Association regarding its merits or its faults.

Notes and Comments

WOODSTOCK FRUIT AND FLOWER GROWERS

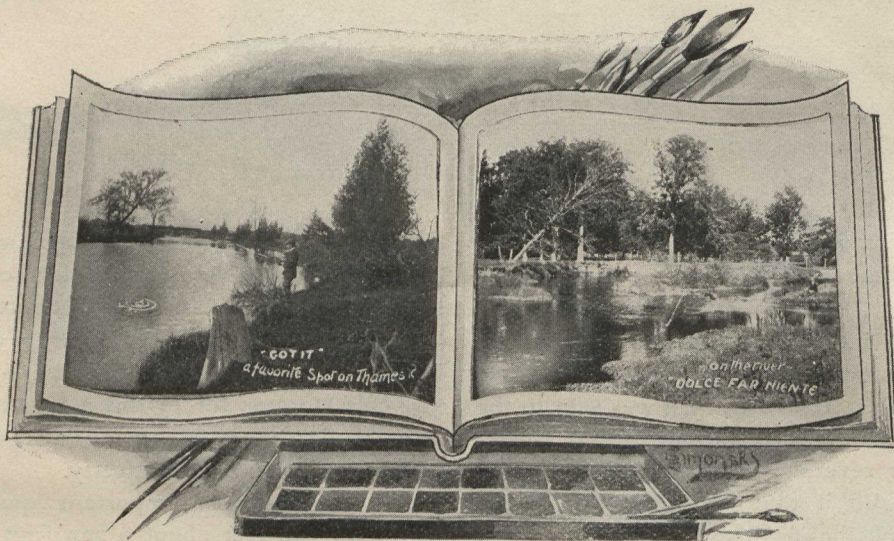


Fig. 2451. (Leave from our Artist's Notebook.)

RETROSPECTIVE

IN 1850 Woodstock became a town, and in 1901 a city. The growth has been most rapid, owing to a combination of favoring conditions, for example, its beautiful situation, the net-work of railways centering here and giving convenient shipping privileges, the consequent important factories, such as Mr. D. W. Karn's organ and piano factory, the Woodstock wagon factory, the Bain wagon factory, the Anderson furniture factory, the Hay Sewing Machine Co., the Stewart stove works, etc., industries which suggested its title "The Industrial City."

Her citizens point with considerable pride to those pioneer noblemen whose presence in early days gave character to the social life of the town, such men as Admiral Vansittart, whose residence at Eastwood is full of curios and paintings by great masters, Lord de Blaque, Rev. Wm. Bettridge, distinguished both in military and clerical circles, and others.

A RECENT VISIT

THROUGH the courtesy of our respected director, Mr. J. S. Scarff, ex-Mayor of the town, we had the privilege of seeing the town on a bright October day, and of a



FIG. 2452. PIONEER NOBLEMEN.

carriage drive among the fruit and flower growers of the neighborhood.

A day spent in company with one so familiar with the place and people was indeed a treat, and led one to hope for another such day when we might see many others on our list of those who have helped to forward the interests of horticulture, and from whom we might gather many interesting notes for the benefit of our readers.

THE RIGHT MAN IN THE RIGHT PLACE.

WHAT a satisfaction it is always where we find the man who is just fitted for a certain duty! and in Mr. J. S. Scarff we found such a man to forward the inter-

ests of our Association at Woodstock. To quote from the Sentinel-Review :

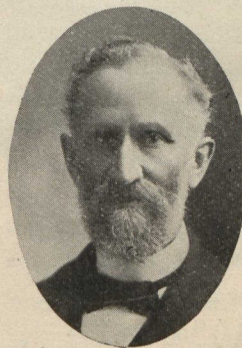


FIG. 2453. EX-MAYOR SCARFF.

“Mr. James S. Scarff has been a resident of Woodstock since 1852, except for two years spent in California. In early life he carried on a carriage business with his father, the late William Scarff, but latterly has lived retired. He has been prominent in municipal matters, serving several terms as councillor, deputy-reeve, and one term as

mayor of the corporation. He has been secretary of the Board of Trade and Agricultural Society, and is now secretary-treasurer of the Horticultural Society. Mr. Scarff was chief engineer of the fire brigade at the time it rendered assistance during the big Ingersoll fire, and he can look back upon a life associated with most of the public movements during the last third of a century."

"Yes," said Mr. Scarff, as we drove along a country road, "I have been here for fifty years, and have always had my own way to make. I made my first capital about thirty-

must take opportunities which they neglect. Now Mr. Scarff has reached a position of wealth and affluence, and he could point with pardonable pride to a street lined with comfortable homes placed there by his capital.

WOODSTOCK FLOWER LOVERS

IT was in 1885 the first Horticultural Society was formed in Woodstock, but but for eight years it had disbanded, when, in 1895, we were instrumental in the formation of an affiliated society, of which the success is most worked. Mr. Scarff has been

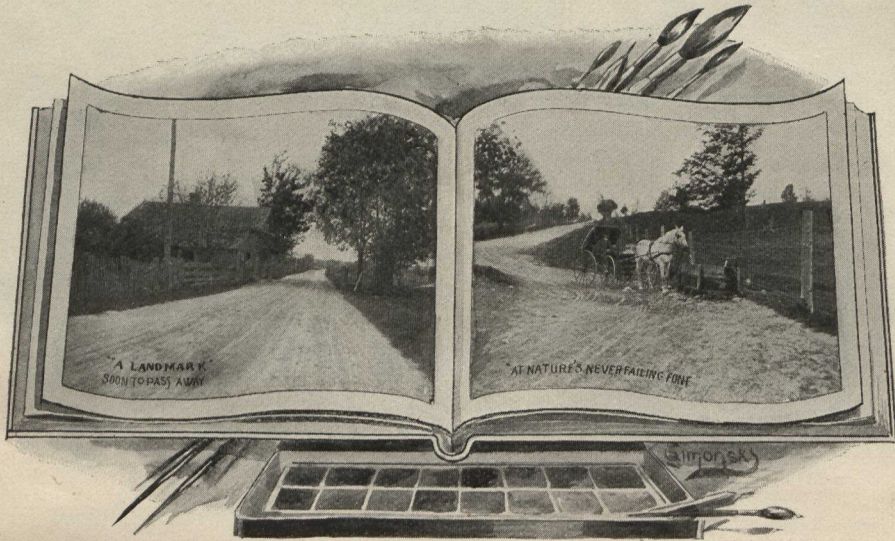


FIG. 2454. COUNTRY ROADS ABOUT WOODSTOCK.

five years ago, when, aside from my trade, I rented about one-fifth of an acre of ground and raised plants of cabbage, cauliflower and celery for sale. I was successful in disposing them direct to private homes in the town for their gardens, and actually banked \$235 off that one-fifth of an acre in one season. This encouraged me to do a considerable amount of market gardening, the produce of which I always sold direct to consumers, and thus got full value."

How true it is, that to excel others we

secretary almost from the beginning, and upon him has therefore devolved a great share of the responsibility.

It was with great pleasure that we responded to the invitations of those past presidents to go over their private gardens, viz., Mr. T. H. Parker, Mr. D. W. Karn, Mr. G. R. Patullo, the latter of whom has been re-elected for 1902. Mr. Parker's cold graperies is a success, and there were still hanging fine bunches of Black Hamburg, Rose Chasselas, Chasselas Marque, and Muscat Ham-

arches thus formed are full of the finest show of bloom, and form a beautiful picture. These are of course renewed every two or three years.

EVEN PEACHES SUCCEED AT WOODSTOCK

SOME years ago, when the late Prof. J. E. Wells was Principal of Woodstock College, we sent him a few peach trees to plant in his garden, wondering at the same



burg. This latter is most delicious in flavor and worth all the trouble of growing, for our ordinary varieties are very inferior to it. No wonder Mr. Parker carries of so many prizes at the Fairs for choice grapes.

ARCHING HIS ROSES

MR. PARKER'S plan of arching the flowering branches of his outdoor roses is commendable. He plants them 4 or 5 feet apart, a long upright growth of young wood, which he then bends over from each plant to form an arch, tying the over-lap with string. The

time if it were possible to grow so tender a fruit at this the highest point in Ontario. Imagine our surprise on this visit to find not

FIG. 2455.

"A City Garden" scene, which forms the centre of the above group, is taken from the gardens of T. H. Parker, Vansittart Avenue.



FIG. 2457. DOYLE BROTHERS' GREENHOUSES.

only Elberta, Fitzgerald and other fine varieties growing and fruiting in the gardens of Mr. Karn, Mr. Parker and Mr. Patullo, but also to find in Mr. Pitman's orchard, far up the highest point, a fine thrifty orchard of the finest varieties, and yielding excellent crops. We noted the same thing in Mr. McLean's orchard; he grows small fruits, pears and peaches in abundance, and unites with fruit-growing the business of fattening and shipping poultry, a good combination, and apparently very successful.

One advantage these men have over us in fruit-growing centers is that they have a fruit market at their very doors, and can sell direct to retailers, while we have express charges and commission to pay, much reducing our profits.

THE ANJOU PEAR

DOES particularly well in Mr. Pitman's orchard, situated on this high elevation. One fine old tree was pointed out, a standard about twenty-five years planted, which averages a yield of three or four barrels per annum, and all fine, clean large sized fruit. What can you get for such pears here, we asked him. Well, about 25 to 50 cents a bushel. I just put them up in barrels and sell them in Woodstock.

You should export such pears as those, we said. That variety is one of the very best export pears, and often brings as much as \$2.00 a half bushel case on the Glasgow wholesale market.

The trouble is, said Mr. Pitman, nobody else here is exporting pears, and I would not know how to go about it alone.

Of course that is the trouble, and until our fruit growers learn to act more in concert, they will continue to be the willing subjects of speculators.

A certain number of fruit growers in each district, say eight or ten, should agree together from the very start in their business, by planting certain special varieties of ap-

ples, pears and peaches, suitable for export, so that when they come into bearing, they can make car lots for export, and work their business independently of speculators. They should elect a president and secretary, and secure the lowest through rates to the best markets, and agree upon a consignee who will give them honest account sales.

THE ONTARIO APPLE

SUCCEEDS SPLENDIDLY WITH MR. PITMAN.

HOW does Ontario compare with Spy in your orchard? we inquired of Mr. Pitman.

Oh, it is more satisfactory in my opinion. When you get it, the Spy is just as good or better, but you could afford to grow and chop out an orchard of Ontario by the time the Spy begins to bear.

How early have you had fruit from your Ontario trees?

Why, some of them have begun bearing at two years of age! I like the Ontario. It is a smooth, clean apple, and packs well. It is an excellent shipper, and is less subject to codling moth than many other apples.

Well, said Mr. Scarff, I believe Mr. Pitman's opinion of the value of the Ontario is about correct. The first tree planted about here was the one sent me by the Ontario Fruit Growers' Association, and so, indirectly, I have been instrumental in introducing it to the growers about Woodstock, and I do not regret it.

The Pewaukee, said Mr. Pitman, was planted in my orchard before I bought it, and I have no liking for it at all. It is ill-shaped, poorly colored, and drops very early. I cannot see why it has ever been recommended to us growers as a valuable variety.

APPLE PRICES

MR. NANSKERVILLE has a few acres of fruit just inside the town; he complains of spots on his Greenings which unfit them for first grade. His Spys, however,



FIG. 2457.

were very fine. He had already sold his apples at from 75c. to \$1.00 for the fruit, right in the orchard.

ROSES AND CARNATIONS

ARE grown quite extensively by Doyle Brothers, who have eleven acres in truck gardening, and some 10,000 feet of glass, chiefly for the production of roses and carnations. The business seems to grow very rapidly, and this fall they have set under glass about 5,500 carnation plants, and about 1,500 roses. Of the latter the more prominent varieties grown by them are Birde, Bridesmaid, Souvenir de Wooten, and Lady Dorothea.

BETTER THAN X'S FOR GRADE WORKS

ARE certain definite terms. One, two and three X's are well enough, but when you want to show the higher grades and put on six or seven X's, it becomes confusing to both buyer and seller.

At the very outset, two or three years ago, we used the terms No. 1, A No. 1, and extra for three sizes of No. 1 fruit; and it is not easy to improve upon these marks. Here is the whole table of grade marks as we have used them in the export of boxed apples, and a shipper may choose any column of marks, but we commend the third as the simplest. Beginning with the poorest grade, we have



FIG. 2158 WOODSTOCK SURROUNDINGS.

For No. 2 apples,
 X or No. 3
 XX or No. 2

For No. 1 apples,
 2 1/4 inches XXX Small or dessert
 2 1/2 " XXX No. 1
 2 3/4 " X XXX A No. 1
 3 " XX XXX Extra
 over 3 in. XXX XXX Extra large

UNIFORMITY IN GRADE MARKS MOST DESIRABLE

Now these marks are most suitable and convenient. Perhaps they seem too many to those who have bulked everything together, big or little. But those days are passed, and we find that uniformity of size in a package pays in dollars and cents. Now if all who try to put up graded fruit would adopt these marks and grades, we would soon find the confidence of the British buyer growing, and our goods in greater demand.

AN INSPECTOR'S OPINION ON GRADE MARKS

MR. A. McNeill, one of the Inspectors under the Fruit Marks Act, looked over this copy before it went to our printer. "You are on the right track," said he. "Those X's are confusing, and your 3rd column is much better. Those terms describe exactly the grade, and are fully in accord with the Fruit Marks Act.

"Ordinarily speaking, most shippers will simply ship No. 1 and No. 2 apples; but of course you who put up fancy grades in boxes, and use a grade to reach uniformity in size, will need the higher grades.

"The speculators, who buy largely, will not grade as you do. How can a man, who handles 40 or 50,000 bbls. of apples in a single season, stop to do it."

"Well, the whole question, in a nutshell, is, would it pay? If 20,000 bbls. so graded would give as much profit as 40,000 carelessly graded, then it would pay."

PRUNING THE GRAPE VINE

THIS work is usually left for the month of March, a cold, chilly month, when the pruner suffers most severely from exposure at such

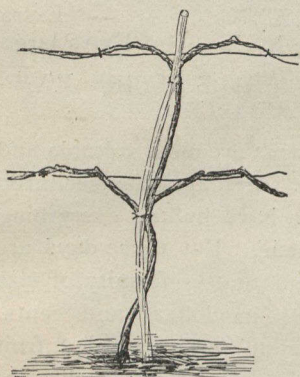


FIG. 2459.
KNIFFEN SYSTEM.

quiet kind of work. In northern sections where the wood is often killed back in winter, it may be best to wait until the cold weather is past before pruning, but in the greater part of Ontario it is better to begin pruning in November. The vines should be pruned and laid down, so that the snow will protect them from the severe cold. Then the brush should be dragged out to the end of the rows with the harrow, and burned, thus destroying many fungus germs.

Most grape growers prune altogether too little. Such thrifty growers as Concord and Niagara, produce altogether too much wood, and if all is allowed to remain, not only will there be much fruit, but much of it will be poor in quality, and the branches

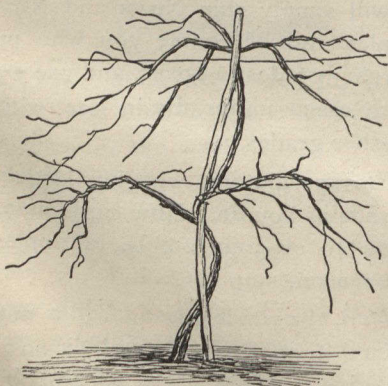


FIG. 2460.
KNIFFEN SYSTEM.

ill-shaped; while fifty buds will give as much fruit as the vine can mature to perfection. A fairly good general rule with Concord is to reduce the canes to five in number, and cut these back to nine or ten buds each. The Delaware should be cut back more severely still, while the Rogers grapes need not to be cut back so closely.

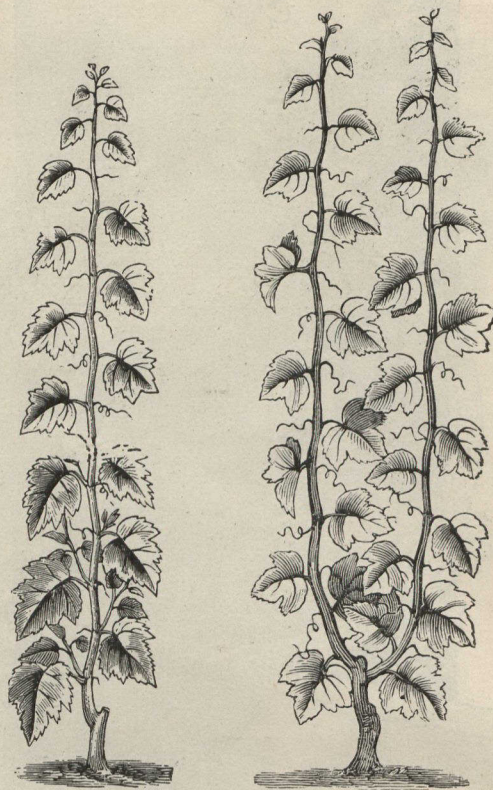


FIG. 2461.

FIG. 2462.
THE FULLER SYSTEM.

THE KNIFFEN SYSTEM OF GRAPE PRUNING

IN those mild sections, where it is not necessary to give winter protection, the Kniffen system is advisable because of its simplicity. As shown in our engraving the vine is cut back to four arms, thus requiring only two wires, and the young growth hangs down, and does not need any summer tying up. Very often these arms



FIG. 2463.
THE FULLER SYSTEM.

are renewed by replacing with a strong young branch from a bud near their base. This is the quickest and least expensive method, but the objection to it is that in time a vine gird so pruned is unsightly with old wood which cannot be laid down for winter protection.

THE FULLER SYSTEM

THIS is a modification of the old country Renewal method, which called for the cutting back each year of every alternate upright to within two or three buds of the main arms; while this method requires the cutting back every upright annually. The old method is best for such varieties as Rogers, which are not over vigorous, but the Renewal is better adapted to our more vigorous growers.

The method is well explained by the accompanying engravings, showing a vine allowed to produce one upright branch the first year, Fig. 1234, two uprights the second year, Fig. 1234, and the third year these two trained horizontally on the bottom wire, to form permanent arms from which young uprights are grown each summer. Every fall, these should be cut back to within one or two buds of the main arm, in the case of Worde, Concord or Niagara,

and there will still be enough wood left to produce as much fruit as the vine ought to bear.

SUMMER PRUNING, THE GRAPE

IS too little observed among Canadian fruit growers. The rush of work is usually so great, and the workmen employed so few, that the vines are too often allowed to have their own way, and grow in the most rampant fashion, giving little opportunity for the fruit to reach its best development, and wasting the energy of the vine in producing and maturing a mass of useless wood. The surplus shoots should be rubbed off with the thumb and finger as soon as they appear, and the canes should be pinched back four or five joints beyond the last bunch of grapes, so that the strength of the vine may be forced into the fruit.

FRUIT TALK AT ST. CATHARINES FAIR

THE smaller fairs seem to be taking a new lease of life, through the exertions of Secretary Creelman and the local officials. At St. Catharines on the 17th we found a magnificent display of fruit, and the fruit men gathered at the door of the main building to listen to In-

spector McNeill giving a demonstration of grading and packing apples. After showing what apples should grade No. 1 and what No. 2, Mr. McNeill, with Mr. Robert Thompson's assistance, packed a barrel of apples for export; he then showed several box packages and advised their use for fancy fruit. In 1901, he said, California shipped 200,000 boxes of apples, and even British Columbia were larger shippers of boxed apples than Ontario. The California people use a smaller box than we are using in Ontario; ours when filled weighs about 55 pounds and theirs only about 40 pounds. It measures outside $20 \times 12\frac{1}{2} \times 9\frac{3}{4}$, and inside $18\frac{1}{2} \times 11\frac{3}{4} \times 8\frac{1}{2}$. It takes about four of them to a barrel. "We have too long been trying experiments in introducing new packages. Why not just accept California boxes, that are already known in the British market," said Mr. McNeill.

Mr. Geo. E. Fisher objected, because the Ontario bushel box is a better box and stronger. Besides it has a great advantage when calculating cold storage space, because being practically $1 \times 1 \times 2$ feet, it measures just about two cubic feet; while the pear half case is the same superficies and measures only one cubic foot.

"I think," said Mr. A. H. Pettit, who was showing his new apple grader, that the California box is too weak, the sides are too thin, and for long shipments are not to be compared to our Ontario apple box."

"I am a little disappointed in my first returns for winter apples in boxes," said the writer, "for, while barrels of Kings are reported selling at from \$5.00 to \$6.00 a barrel in Great Britain, my boxes are only selling at from \$1.00 to \$1.50, and there are scarcely three boxes to a barrel!"

MIGHT EXPORT PEACHES

DEPUTY MINISTER JAMES, of the Ontario Agricultural Department, is of the opinion that with proper export faci-

ties a big trade in peaches could be built up between Canada and Great Britain, such as now exists between the Old Country and the United States. He did not think that speed was such a factor as proper cold storage accommodation. In many districts of Canada, such as the Niagara and Essex fruit belts, magnificent peaches were grown which would find a ready sale in England at good prices if they could be got there in really good condition. Mr. James remarked that the United States peach export trade had been to a large extent fostered and built up by Government efforts.

As a sample of the prices which obtain for this luscious fruit in England it may be mentioned that a citizen of the Republic recently remarked to *The Mail and Empire* that he got the shock of his life at a London (England) restaurant. After lunch, he casually ordered half a dozen peaches, forgetting how far from Peachland he was. The shock came when he had to put up half a crown (60 cents) each for them.

MR. R. L. HUGGARD AT LINDSAY FAIR

IT would be a good thing if we fruit growers could oftener exchange visits at fairs, but our fruit harvest makes it very difficult. Mr. R. L. Huggard writes the *Sun* of the fruit at the Lindsay Fair as follows:

In fruit, the exhibit was exceedingly fine, notwithstanding the cold, rainy spring. Lindsay vicinity must be a splendid fruit section, as many sorts, such as Kings, Greenings and some others, especially Fameuse and Wealthy, were superior to the same varieties shown at the Industrial. The same applies to pears—Bartletts, Clapps' Favorite, and Flemish Beauty, with several other kinds equally good. Quite an exhibit was also made in plums, both of native and foreign varieties. There was, too, a plate of beautiful Fitzgerald peaches. I afterwards saw some of the fruit on the trees in

the handsome and well cultivated grounds of Mr. Robson, who has one of the neatest appointed gardens in town, just alongside that of Thomas Beal, who is truly said to be the father of horticulture not only in the town, but in the surrounding districts.

Immediately south of the Exhibition stands the beautiful new hospital, which was a gift of Mr. Ross of Montreal, a former resident of Lindsay. The building and the location are simply magnificent, and would well repay a visit. The beautiful edifice is to be officially opened in a few days.

PEAR CANKER.

THIS is a disease which has been hitherto confounded with pear blight, but recent investigations prove that it is quite distinct, and is caused by a well-known fungus, *Sphaeropsis Malorum*.

"The disease shows itself," says the Delaware Bulletin 57, "on the main body or on the larger limbs, as, round to elongated, sunken areas, which are usually dark or black in color. These sunken areas are due to the death and dying-out of the inner bark. The bark adheres firmly to the underlying wood, but commonly in the latter stage of the malady, becomes cracked.

"The dead area is usually bounded by a crack, making a short line of demarcation with healthy wood. The dead bark may also show a number of cross fissures. These areas are self-limited, or at least extend slowly, but a number of adjacent areas may coalesce, so as to girdle the limb or main trunk, and thus kill the tree. Formerly this disease has been confounded with the ordinary pear blight, or fire-blight previously mentioned, but the two troubles are entirely distinct, both as to their character and cause. Fire-blight is more diffusely spread; in other words, it is a general blackening of the limbs, and does not appear in circumscribed areas on a limb or trunk. The tissues also do not shrink or show cracking

of the bark, which is so characteristic of this disease."

Nature attempts to form new healthy bark underneath, and if some exterior application were effective in destroying the old fungus, the disease might be cured, and for this the following formula is recommended: formaldehyde, 1 pint; glycerin, 2 pints; water, 17 pints.

PEAR BLIGHT.

THE cause and spread of this evil is no longer so mysterious as in former days. The Bulletin above quoted gives the following important particulars: The disease is caused by a minute germ or bacillus. This germ only needs to come in contact with a blossom or be introduced into the tissues of a leaf, young shoot or bud for the disease to manifest itself. From that point it extends slowly downwardly and inwardly.

One of the great sources of infection is observed in the spring, when blighted twigs are often seen to exude a milky looking substance. This latter is the pear blight virus in an almost pure state. If examined under the microscope it is found swarming with rod-shaped organisms or bacilli. From this, too, the organism can be isolated and grown upon artificial media, and from these pure cultures, blossoms, buds, twigs and leaves can be inoculated, and the trouble reproduced.

To show the relation of the milky virus exuding in the spring from blighted trees to spread of disease, a quantity of the latter was collected on April 25th, 1902, just at the time that the trees were coming into bloom. This was diluted with sterile water to make a turbid fluid, which the microscope showed was swarming with pear blight germs. By means of a camel-hair brush dipped in the diluted virus, a number of blossoms were touched in their centres and infested with germs. The blossoms so inoculated were then enclosed in bags.

Two weeks later all of the twigs which bore inoculated blossoms were blighted for a distance of four to eight inches, and bore black and shrivelled leaves.

One shoot whose blossoms were inoculated six weeks previously was blighted for the entire length of the shoot, a distance of fourteen inches, and was beginning to extend downward from these points.

It has been shown that bees and other insects are largely instrumental in disseminating the virus from one blossom to another; and while it would be impossible and unwise to banish the bees, even if we could, it is possible to remove much of the virus which they are so instrumental in carrying.

This will consist in a thorough inspection of the orchard in the spring before the blossoms open, and the cutting out and burning of all blighted limbs, branches and spurs. This will prevent, in a large measure, the wholesome infection of the blossoms, either on terminal growths or spurs, at which time nearly all the blight gets its start in the tree.

Again, if one will inspect a pear orchard any time during the months of May or June, one will observe a greater or less number of blighted terminal shoots and spurs. These represent blossom and perhaps bud infection as just noted. If these blighted parts be allowed to remain, the disease will extend and serious consequences will follow. If the terminal blighted shoots are cut out, the progress of the disease from these points can be stopped, provided care is taken to cut well below the blight and through the healthy wood.

When the spurs are affected, it is seen as clusters of dead leaves. These being short, it does not take long for the blight to extend from them down to the larger limbs. If not cut off on the first appearance of blight in them, the disease would have extended into the branch, where their excision would be useless.

Hence, soon after blossoming, the tree

should be watched carefully, and every evidence of blight removed as fast as it makes its appearance. Delay, especially as regards the excision of blighted spurs, is fatal. That is, it will necessitate the later removal of a large quantity of wood, even to limbs, which might otherwise be spared.

Most farmers practice pruning for blight, but they commonly do it whenever convenient, rather than at the right time, or perhaps not until the tree is badly involved.

Following the two spring prunings, the first before the buds are open, and the second during a period of a month following them, there should be a third inspection and pruning in the fall before the leaves drop, cutting out at this time any evidence of blight which may have escaped the previous operation.

THE GEORGIAN BAY APPLE HARVEST

MUCH FINE NO. 1 FRUIT—PRICES LOW.

THE apple harvest in the celebrated Georgian Bay district, says our friendly contemporary, the Sun, is now fairly under way.

The apple crop in the eastern end of that district is turning out better both in quality and quantity than expected. The color of the fruit is superb.

"Never before," said W. T. Pattullo, one of the large growers near Creemore, "were my Ben Davis as free from blemish, as well formed, and as highly colored as this year."

But it is not the Ben Davis alone that is well colored. The Ganos and Kings are also rich in coloring, Spys alone showing a little weak in this particular.

There is to be seen in the Pattullo orchard an illustration of how quickly results can be obtained from grafting. There are now perfect tops in Kings, Ontarios, and Spys, on trees which were worked over five years ago. Some of these new Spy tops will give a barrel of fruit this year, while Ontarios will do even better. Mr. Pattullo has a perfect

union in Spys on Astrachans, but he agrees with all other practical fruit-growers in saying that the Tallman Sweet affords the best possible stock to graft upon.

The importance of the apple-growing industry about Creemore is shown by the fact that a firm of dealers have this year put up a large apple storehouse in Creemore for the receiving of the fruit. The same firm have another storehouse in Winnipeg, and their expectation is to find in the West the principal outlet for the apples produced in this district.

Prices about Creemore, considering the excellent quality of the fruit, are running very low—75c. for fall, and \$1 for winter fruit, on the tree. The lion's share of the profit in this year's apple crop, in that section at all events, will go to the dealers.

"I have," said W. B. Sanders, President of the Georgian Bay Fruit-Growers' Association, in speaking of the keeping of apples for one's own use, "adopted this plan of keeping mine: I store in a cool outthouse until after several degrees of frost, and then lay singly on shelves in the cellar. I find fruit will keep in that way in perfect condition until well on in spring."

"And I," said D. Somerville, of Sunnidale, "have never had better success than with pitting. In pitting, I dig in a piece of sod ground to a depth of three feet or so, and put the apples in the opening. Above the apples, but about six inches below the surface, I put in a board covering so as to prevent the earth covering from pressing on the fruit. Then I cover with enough earth to exclude air and frost. I have had Spy; Ontario, and Russet apples come out of the pits so made in perfect condition after spring seeding was over. In fact, the fruit was as fresh as if just picked from the tree."

This year the keeping quality of apples, owing to favorable climatic conditions, should be particularly good.

THE McCABE ORCHARD, NEAR BRONTE.

ALTHOUGH the past summer was an exceedingly wet one, says the Sun, Mr. McCabe was able to have his trees thoroughly sprayed. The effect is clearly shown on almost every tree in the orchard. Spotting is as rare in his fruit as it is common in a great many other cases. Another indication of the healthfulness of the trees is found in the fact that four Baldwin grafts put on a Canada Red three years ago are bearing eighty apples this season. In fact, one Baldwin graft is bearing the first year after putting on. Mr. McCabe has followed the same plan as C. E. Secord, of the Niagara district, in planting Kieffer pears along the fence lines. Some of these Kieffers have several pears on this year, although they were not set out until 1901. The fruit part of the farm is not confined solely to apples. There are 1,800 plum trees, and the berry bushes cover eight acres.

MAY HAVE 3,000 BARRELS OF APPLES.

The bulk of the apple trees are Greenings and Baldwins. A short time ago Mr. McCabe thought he would do well if he secured 1,000 barrels of merchantable fruit. When he made this estimate the manager of the farm expressed the belief that the yield would come nearer 2,000 barrels. Now, when picking is actually under way, it will not be surprising if the total yield reaches 3,000 barrels. The quality of the fruit produced is indicated by the fact that Mr. McCabe has already had an offer of \$1.35 per barrel. This he has declined, however, as he is confident he can do very much better.

AN APPLE WAREHOUSE.

In order to make the most of his crop, he has approaching completion an apple warehouse 80 by 30 feet. In building this warehouse a trench for the walls was dug below the frost line. This trench was filled with field and lake stone to a little above the

level of the ground, and then a cement wall was carried six inches above this.

The floor of the whole structure was filled in with stone and finished with Portland cement. This floor slopes towards a driveway which runs the entire length of the building. In this way the work of cleaning is facilitated. On either side of the driveway are the apple bins, each bin holding three tiers of apples about three feet in thickness. The bottom floors of these bins are formed by laying joists (on edge) four to six inches above the level of the floor of the building. These joists are about an inch apart. In this way air circulates under the bins, up between the joists, and through the apples, which are piled above. The floors of the two upper tiers are formed in the same way as the floors of the bottom tier. In this way each bin contains, as stated, three tiers of apples, one above the other, with an open space between each, and the air circulating through the whole. In constructing the walls of the building Novelty siding is nailed to the studding, and tar paper placed over the siding. Then there is an air chamber, and next this air chamber is a lining of matched lumber covered with tar paper. Then there is a second air chamber of four inches, with tar paper and tongued and grooved lumber. Above the warehouse is a storeroom in which there is room for the storing of sixty tons of hay. This affords room for the storing of surplus hay, and at the same time prevents frost from penetrating from above.

WILL NEARLY PAY FOR ITSELF IN A YEAR.

"This building," said Mr. McCabe, "is costing \$1,200. It will afford room for storing 1,000 barrels of apples, and I expect that the extra price which I shall obtain later on for the apples which I shall be able to hold there will pay for the entire cost of the building in the first season. I am justified in this opinion by the fact that the best offer

I have received for my apples so far is \$1.35, while a dealer who has secured a considerable quantity of winter apples refused to sell out to me at \$2 per barrel. This dealer evidently expects that his fruit will be worth a good deal more than \$2 a little later on, and I believe it will, too."

While Mr. McCabe depends largely upon his cattle for the fertilizing of his orchard, he does not overlook the value of clover. In fact, there are few farms on which clover is so largely grown as on his place. Clover is to be found everywhere, and the invariable practice is to turn it down the second season. The quality of the grass on the place is shown by the fact that some steers which on the 28th of June averaged 753 pounds, averaged 916 pounds on the 21st of September.



FIG. 2464. AN ENGLISH MORELLO CHERRY TREE AT MCKINNON'S.

ENGLISH MORELLO CHERRY ON CLAY

THE best orchard of English Morello cherry trees we have seen in Ontario is owned by Mr. D. J. McKinnon, of Grimsby. The trees are five years planted on clay loam, well drained and well cultivated, and cut back to within two feet of the ground, so that the heads are formed very low and the fruit can all be picked while standing on the ground. The trees were bending down with an enormous load of beautiful dark red fruit on August 2nd, when we took the accompanying photograph, and it was estimated that they would yield an average of three baskets to a tree. "They pay," said Mr. McKinnon, "better than any trees on the place. Of course they have been well fertilized, and this may in part explain their great productiveness. I put a car load of wood ashes on that two acres of cherry trees last year, and now I am reaping the returns."

We have the same variety of cherry at "Maplehurst" on sandy loam, and although the trees were nearly as full of fruit, there was much greater tendency to rot, and all had to be gathered before the above-mentioned date. It is unfortunate that this cherry should be so often sold as Wragg, not a euphonious name, surely; this name was given it by a western nurseryman, who claimed that he had a variety quite distinct from English Morello, but nobody else seems able to see any difference.

FAIRLY GOOD REPORTS OF FRUIT EXPORTED TO GLASGOW.

WHEN the fruit growers of Ontario have learned to produce only fruit of the best quality, and never to allow inferior samples upon a tree to reach maturity, they will have learned the secret of success in fruit growing. Then we can ship with confidence to any market and expect reasonable results.

Every week since August 1st, when Astrachans began to ripen, we have kept up steady

and successive shipments of apples and pears, with varying success, but on the whole, with encouraging results.

With the exception of one lot to Manchester and one to Liverpool, all these have gone to Glasgow, and a recent mail has brought us the following report by John Brown, Inspector at Glasgow, which may be of interest:

EXTRACT.

(Marina Shipment).

The 953 C's shipped by L. Woolverton consisted of Wilson C's of pears and apples, $\frac{1}{3}$ C's pears, 40 lb. boxes apples, 2 C's plums, 3 large Wilson C's peaches. The pears were packed in the $\frac{1}{3}$ C's in wood shavings with no paper on them; the variety was principally Bartlett. These showed up very well, although some were very ripe. The pears in the Wilson C's showed up well also, and the Duchess apples in Wilson C's were the best Duchess I have seen this season. The peaches were very wasty and only about a third of each case was fit for use. These were put up in special cases with no ventilation whatever, which I think had something to do with the condition they arrived in. They are, in any case, a dangerous fruit to ship. The two half cases Washington Plums were useless. The following are the prices:

Bartlett Pears in Wilson C's,	6/3	8/-
Duchess Apples do	5/-	6/-
Bartlett Pears, $\frac{1}{3}$ C's.....	5/-	5/9
Apples, 40 lb. boxes	6/3	6/6

I have seen two of the largest buyers of the Bartlett pears, both of whom report: the pears they got went sleepy, and after 3 or 4 days were quite useless.

(Lakonia Shipment).

L. WOOLVERTON, PEARS AND APPLES.—The pears were packed in half cases in Excelsior packing, without being packed separately in paper. This packing was (for pears) rather coarse; something of a finer and softer nature would, I think, be more suitable and less likely to bruise the fruit. I also advocate the wrapping of each pear separately in paper, the same as the Californian pears, using the same kind of paper. Some of the pears were packed in Wilson cases. There was no paper on these either, with the result that a good many were bruised. The half case is going to be the most popular package here, as it relatively contains more fruit and is less expensive than the Wilson case. The latter would only pay with fruit of exceptional quality. The apples were packed in special cases holding about 40 lbs. of fruit. They were in layers with a great deal of Excelsior packing between each layer. This, I think, is quite unnecessary, a layer of Excelsior being sufficient, as buyers naturally prefer a box full of apples rather than two-thirds and one-third packing. Woolverton also sent a sample Wilson case of peaches and a sample case tomatoes. The former showed up well, each peach being wrapped up separately in paper and mostly in good order; the latter were a failure, the

tomatoes being soft and useless. The following are prices realized:

Bartlett Pears, $\frac{1}{2}$ C's, $\frac{3}{9}$ $\frac{7}{8}$. Some ripe, others extra good.

Louise Bonne Pears, $\frac{1}{2}$ C's, $\frac{2}{6}$ $\frac{4}{6}$. Green and good.

Flemish Beauty, $\frac{1}{2}$ C's, $\frac{3}{3/6}$. Green and hard.

Duchess, $\frac{1}{2}$ C's, $\frac{4}{3}$. Very good.
Bartletts, Wilson C's, $\frac{3}{6}$ $\frac{5}{3}$. Wasty and irregular.

Apples, Wilson's C's, $\frac{3}{9}$ $\frac{7}{3}$. Kings made highest price.

Peaches, Wilson C's, $\frac{6}{3}$.

Tomatoes, Wilson C's, $\frac{2}{2/3}$.

SUMMER TREATMENT OF SAN JOSE SCALE

ADVICE BY

MR. G. E. FISHER,

PROVINCIAL INSPECTOR.

THE cuts below clearly represent the importance of treating in summer trees which are badly infested with the San Jose Scale.

During the last week in August 1901, the tree at the left (1) was so affected that several limbs were already dead, and that at the right (2) not nearly so badly but had a good sprinkling of scale. At this date



FIG. 2465. BADLY INFESTED TREE, CURED BY TREATMENT.



FIG. 2466. SLIGHTLY INFESTED TREE, UNTREATED.

the dead branches were removed and the badly infested tree treated with twenty per cent. of crude petroleum and water, and the other tree left unsprayed.

The cuts show how the trees leafed out this spring. The treated tree blossomed and bore fruit this year, while the scale increased on the other during last fall and sucked the life out of two thirds of the top.

HINTS TO APPLE SHIPPERS

EARLY APPLES—CASES WITH FILLERS—DUCHESS
AND ASTRACHAN APPLES—TOP PRICES FOR
GRAVENSTEINS—PEACHES FOR EXPORT—HOW
TO PACK—STENCILS FOR NAMES OF VARIE-
TIES — DUCHESS APPLES, TEN SHILLINGS !

A LETTER FROM

A. McD. ALLAN,

WOLVERHAMPTON, ENGLAND.

WE are able now to speak with confidence upon the desirability of sending early kinds of our Canadian apples into British markets. We have had two shipments already this season and, generally speaking, results were satisfactory when all the conditions are considered.

As a rule these fruits are not known here, and the ordinary purchaser or the private citizen will ask for something known such as Baldwin, Spy, Russet, etc. But a taste of ours is enough to convince the worst sceptic of their superiority over home grown varieties or others. There is a mellowness, flavor and juice in ours that cannot be found in others in these markets, and by persistence, a free use of cold storage and careful selection and packing we are sure of a high and permanent place in British markets. While the Wilson case with drawers and fillers is much admired, I find it easier to sell the layer cases with apples in layers and divided by cardboard between layers, as these contain a larger average of fruit in proportion to the size of case, while the others are disappointing to buyers when the fruit is removed and weighed.

Of early kinds Oldenburg takes first place easily and buyers ask for more. Transparent is popular also and will always be in demand owing to its flavor and fine appearance

Astrachan takes well when in good color and not over large; indeed the good medium sized apple finds more ready sale than the large, besides the Astrachan, when large, seems to lose flavor quickly, become mealy and crack.

Strawberry arrived well and is appreciated.

Pipka must have most careful handling and storage as it ripens quickly and gets off flavor and cracks in a few days. It should be picked when perfectly hard. Switzer carries fairly well and sells like several of its class when there are no Oldenburg on hand.

Titovka is much the same type as Pipka and must have "deep consideration" in picking and storage. It is a mistake to ship half-grown Alexander, as it presents the appearance of the boy who laments that he cannot be a man at once, and a full grown Alexander is too large to make money for the shipper as it has not the points of excellence to warrant a fancy price. Maiden's Blush will stay mostly on account of fine appearance and regularity of size and form.

Fameuse should not be sent over so early as it lacks size and color, but later on will be in strong demand at fancy prices for a well put up sample.

St. Lawrence is without doubt wanted here and will be enquired for by all who have had the good fortune to test its fruity flavor. Besides these mentioned we have had a few

others such as King, which is always popular, and Cabashea also. Gravenstein needs no mention for popularity and when in good color makes the top price. We had a case of apples named Brockville Beauty, highly colored but very small. It may be some of the children of that variety, but my recollection is of a large fruit more of the Fallwater size and form.

Peaches did not arrive in order, but why? I observed the only few specimens discernable were Garfields, which were loosely packed in tissue only, and one kind not named from Mr. Woolverton, where tissue was only used in a few specimens. In the whole there was one perfect specimen and that was not wrapped at all. Evidently the double wrapping is not suitable for peaches, nor do I think desirable in any fruit. Whatever the packing may be it should allow a perfect circulation of air around the fruit itself. Samples in the Wilson case fillers were good, but unless each filled its compartment closely, the moving tends to bruise any soft fruit.

The first shipment came in cold storage and was perfect, excepting peaches and soft pears. The second lot was not in cold storage and all peaches, pears and plums were rotten, and the softer kinds of apples wasty and unfit for market.

My own judgment is that a compartment, supplied with cool dry air by a fan, would be more serviceable for fruits than the cold storage as it is often supplied. Possibly if the matter were followed out we would find that the cold chamber is not held at an even temperature during the voyage, or it may be held at too low a temperature. This matter requires looking carefully after. I believe 43 to 45 would be cool enough for soft fruits and certainly if the temperature goes under 40 evil will ensue.

But to return to the staple fruit, it pays better to ship an apple that combines eating and cooking uses than simply one, medium

size, even samples of good form and generally attractive. To get a high price both the eye and palate must be tickled.

It is better not to try and impress the markets with the large number of varieties we have by sending shipments mixed with many kinds. More money is made by a few choice kinds and consumers are not mystified as to what to buy. It is a mistake to pack with fresh excelsior as it heats when not in cold storage, and generally too much of it is used. If properly seasoned or kiln dried it is one of the best materials we have for the purpose, and when apples are wrapped solidly in cases a very slight scattering of excelsior between layers is useful. Even when it is used without wrapping samples, much less will suffice than I observe shippers using. The Russians use straw when packing apples for winter use. Long single stalks are placed under each layer above and along the sides all through the package so that samples are separated by a few straws on all sides, and some claim this system is perfect although tedious. For those who have the time and patience it may be worth trying.

It would be a great convenience if shippers would use stencils to mark the name of kind and shipper's name on each package, as labels are so easily torn off in transit.

We are not receiving fruit enough to go into the markets and make a perfect test of what can be done in prices, as much of it is used in keeping the exhibition tables attractive. But the small surplus we get is readily sold at 8 shillings for the large cases and 5 shillings to 6 shillings for the small where the fruit is in good order. I did sell some fine Oldenburgs at 10 shillings and the dealers in selling by the pound charged 8 pence. Consumers readily, however, pay from 4 pence to 6 pence per pound.

Freights are too high and pressure should be brought to get a much better scale of rates from forwarding companies. I believe fruit pays the highest average freight of any

of the products of the farm. Why is this? I can only think it is because shippers are generally good natured enough to pay it. We are long suffering or have been so, let us kick.

I met a gentleman a few days ago who asked me if we had the new tin can for fruits

and vegetables that needs no solder. Perhaps our canners know all about it, but in case it may be of use to them full information can be obtained from "The Self Opening Tin Box Company, York Road, King's Cross, London," who use the Muncham patent closing machine.

APPLES IN THE GEORGIAN BAY DISTRICT

BY

T. H. RACE, MITCHELL

IT was my privilege this fall to visit some of the districts bordering on the Georgian Bay and note the apples and other fruits out there, in comparison with other sections lying further south. It was the second time that I had acted as judge of the fruit exhibits at the Orillia fall fair, and on neither occasion were the expectations of nine years ago, when we held our annual meeting in that pretty town, borne out.

It will be remembered by many of those who met at Orillia that fall nine years ago what a splendid showing of apples there were. That seemed to be a favoured season with them, and we were all most favorably impressed with very superior quality of the apples produced and shown there. From later visits I have satisfied myself that such varieties as the Baldwin, the Spy, King, Greening and some of the pippins will not do well in the Orillia district. The Ben Davis will do fairly well on the ridges round about the lakes, but I doubt its being generally successful. The Duchess, Wealthy and Alexander are still promising varieties there; but the apple that I found especially at home in that district was the North Star. In no other section where I came across the North Star did it appear to thrive as well and

attain as high a quality and good size as about Orillia.

In my opinion the North Star is very little inferior in quality to the Gravenstein. Mr. D. Cantelon, of Clinton, the Huron fruit king, who grows it largely, thinks it superior in quality to the Gravenstein. And it is free from spot, a better grower, a longer keeper and uniformly larger in size than that variety. All things considered I believe the North Star a coming apple for the late fall or early winter market, and especially valuable for the Orillia district.

But I found another apple at Orillia which I consider worthy of special mention. It is evidently a seedling from the Duchess, and resembles that variety in all its essential features except in its season. It is a Duchess apple moved on about six weeks in its season. Our director, (Mr. C. L. Stephens), for that district will have some specimens of it at the Walkerton meeting. If the Duchess ever becomes, as it promises to, a marketable apple up through New Ontario, and as far west as Winnipeg, this seedling will be a valuable addition to prolong that market to well nigh early winter.

Still another good seedling I found at Orillia grown by our director Mr. Stephens

which might be an offspring of the old Primate, but later in season than that old variety. It does not however promise to fill a place in the market like the other spoken of above.

Coming on to Collingwood I found a very fine exhibit of fruit there. Whatever the climatic differences between that section bordering on the Georgian Bay and Orillia, a few miles inland, the differences in the fruit is very marked. At Collingwood I found the Spy, Baldwin, King, Greening and all the standard varieties quite up to the mark. Ben Davis, Snow, Wealthy, and Blenheim Pippin were equally good; but

Alexander and North Star were not up to the Orillia standard. Here for the first time I found a special prize offered for the best barrel of winter apples, and several competitors entered, the varieties being mostly Spies, Kings and Baldwins. It was a good object lesson and might well be imitated by other fall fair managers. The only defect was that the public were excluded while the judging was going on. This is a mistake in connection with all fruit judging.

I will have something to say about the cedars and other native ornamental trees at Orillia next month.

A STUDY IN FRUIT BLOSSOMS

BY

PROF. H. L. HUTT, B. S. A.,

ONTARIO AGRICULTURAL COLLEGE, GUELPH.

A TREE in full bloom is an interesting study, not only because of its beauty, but because of the promise it makes of bearing fruit. We can all enjoy its beauty; the fruit-grower appreciates the promise of fruit; but in the tree economy, the blossoming and bearing of fruit are only means to an end,—the ripening of seed for the perpetuation of

the species is the ultimate aim of the tree in blossoming.

THE STRUCTURE OF A FLOWER

If we examine an apple blossom, or that of most any of our fruits, we will see that it is made up of a number of parts. These may be grouped into two sets: those on the outside are the floral envelopes, made up of the calyx and corolla; and those in the centre are the sexual, or reproductive organs, the stamens and pistils. Let us examine each of these parts separately.

The *calyx* is the outer whorl of the floral envelopes, and is usually of a green color. Its parts are called sepals, and when united by their edges, they form the calyx-tube. The free ends are called the lobes of the calyx. It is the remains of these that may be seen at the top of the fruit in the gooseberry, apple or pear.

The *corolla* is the showy colored part of

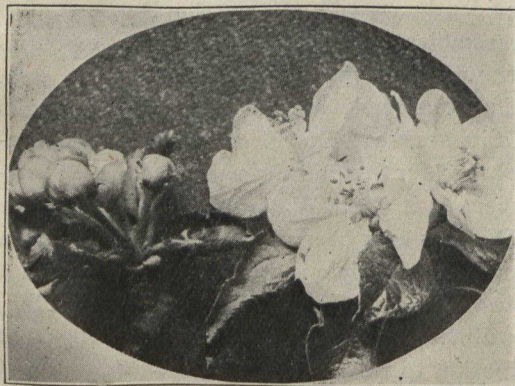


FIG. 2467. APPLE BUDS AND BLOSSOMS.



FIG. 2468. SEMI-DOUBLE BLOSSOMS OF CRAB APPLES, SHOWING PART OF THE STAMENS TRANSFORMED INTO PETALS.

the flower, and is situated within the calyx-tube. Its parts are called petals. The showy color of the petals helps to attract insects to the nectaries in the centre of the flower, and in this way indirectly helps to bring about fertilization.

The *stamens* are the male organs of the plant and are situated just within the circle of the corolla. Each stamen is made up of a thread-like filament, on top of which is the anther. The anthers contain the pollen, a yellow substance, which is discharged when the anther becomes mature, and being dry and powdery it is easily carried about by winds or insects.

The *pistil* is the female organ of the plant, and is situated in the centre of the flower. It is made up of three parts: the *ovary* at the base, which contains the ovules or rudimentary seeds; the *style*, an elongated tube leading down to the ovary and the *stigma*,

a roughened enlargement on the top of the style, which receives the pollen from the stamens. The pistil is one of the tenderest parts of the flower, and is often injured when late frosts occur in the spring. The injury from such frosts may not be seen at all upon the other parts of the flower, but the injured pistil turns black, and consequently does not develop fruit.

HOW DOUBLE FLOWERS ARE FORMED

In a perfect single flower, all of the parts above named are present; and, upon examination, it will be found that there is a regular symmetry in the number of parts. In an apple blossom for instance, we will find five sepals, five petals, a five-celled ovary, and while there is more than five stamens, it will be found that there is usually some multiple of five. The double flowers, which we admire so much in roses and many other ornamental plants, are brought about by the conversion of the stamens into petals. In most cases, this doubling is only partial, that is, only a part of the stamens develop into petals; but in some cases, not only the stamens, but pistils also are transformed. Flowers which are completely double cannot, of course, develop seed.



FIG. 2469. PISTILLATE STRAWBERRY BLOSSOMS.

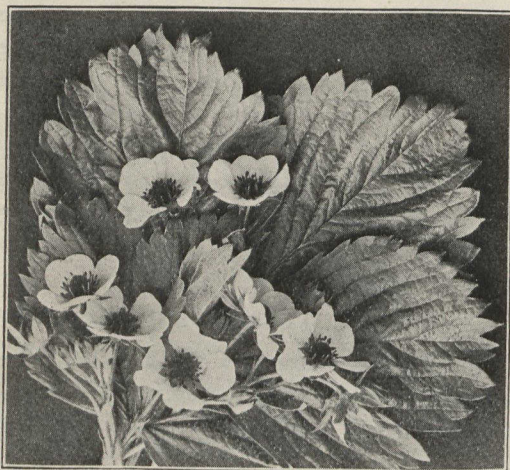


FIG. 2470. THE BISEXUAL STRAWBERRY BLOSSOMS.

SEXUAL DISTINCTIONS IN PLANTS

The parts of the flower essential to fruitfulness are the stamens and pistils, and while most of our fruit trees are hemaphrodite, that is, having the stamens and pistils present in the same flower, yet there are many exceptions to this rule, in other kinds of trees and plants. In the oak, hickory, chestnut, corn, pumpkin, ragweed, or begonia, two kinds of flowers may be found

upon the same plant, the one having pistils only, the other stamens only. Such plants are said to be *Monœcious*.

In maples, pines, and willows, it will be found that the essential organs are more widely separated, for the stamen and pistil are not only on separate flowers, but on separate trees. Such trees are said to be *Diœcious*.

Many varieties of strawberries show a peculiarity in this respect which calls for a word of explanation. The strawberry as a rule, is hemaphrodite, or bi-sexual, that is, having stamens and pistils present in the same blossom; but there are many varieties, such as, the Crescent, Haverland, and Warfield, in which the stamens are very rudimentary, or entirely lacking. Such varieties are called pistillate. To make them fruitful, they must of course be grown alongside of bi-sexual or perfect flowering varieties, whose stamens furnish the pollen for fertilization. To speak of the latter, however, as staminate varieties, as is often done is incorrect, for a staminate flower is one in which there are stamens and no pistil, which never occurs in any of the strawberries.

THE RIVERS PEACH

SIR,—I always find something of interest in the Canadian Horticulturist. I agree with what is said in the October issue in regard to Alexander, Hale and Triumph peaches, but I cannot quite agree with what is said about Rivers Early peach. Specimens of Rivers peach grown near our place this past season were as large as Elberta, were almost white, with red cheek, and did not cling severely to the stone. These peaches were delicious, being exceedingly juicy, and I said to myself, if the Rivers everywhere is as good as this, it is a marvellous peach. The grower of these

Rivers peaches said that it was hardy in bud, bearing regularly every year, and he sold the fruit in the Rochester market at remarkably high prices, since it had no competitor. I have been told that this variety was too tender for long shipment, but this is no serious objection to many people who grow for nearby market. I am anxious to get information in regard to the Rivers peach, and how it succeeds in various parts of this country.

CHAS. A. GREEN.

NOTE BY EDITOR—Unless overloaded, the Rivers Peach is all that is claimed for it by Mr. Green. Our chief objection to it is its tender flesh, making it a poor shipper, and it is little desired for canning.

CONTRASTS IN METHODS OF APPLE CULTURE

BY

W. T. MACOUN,

CENTRAL EXPERIMENTAL FARM, OTTAWA, CANADA.

DURING the early part of September the writer had the opportunity of visiting the Hamilton and Grimsby districts, and of inspecting some of the large apple orchards there, and almost immediately afterwards of travelling more than 350 miles east to Montreal and vicinity, and examining large orchards there also. The contrast in methods was very marked, yet as good fruit was seen at one place as at the other. In the West, clean culture, heavy pruning and thorough spraying resulted in good fruit. In the East there was good fruit where the orchard was sod, the trees lightly pruned, but thoroughly sprayed. Spraying with Bordeaux mixture is necessary everywhere, but methods of pruning and soil culture must be governed by climate. In the West the soil is cultivated principally to conserve moisture. In the East, especially in the Ottawa Valley, this is not usually necessary, as there is sufficient moisture to ensure a thrifty growth and well developed fruit. In the West, severe pruning invigorates the tree, the result being larger fruit. In the East, there is danger of sunscald from severe pruning, though light pruning is necessary.

In Eastern Ontario and the Province of Quebec protection for the roots in winter is, in the writer's opinion, necessary, and as a rule more important than conservation of moisture. A young, bearing orchard may be ruined by winter-killing if the roots are not protected by grass, sod or some cover

crop. There is no better system of cultivation known for Western Ontario than clean culture in spring and early summer, followed by a cover crop for winter protection and for adding humus to the soil. It is doubtful, however, if this system should be recommended for all sections. The writer believes that after the young trees are established best results will be obtained, where the trees do not suffer from drought and where the soil is good, by keeping the orchard in grass or clover all the year round, and mulching the ground with the grass or clover, which should be cut several times during the season. The soil may be top-dressed with manure or other fertilizers as often as is found necessary to maintain its fertility. There is much more likely to be immature wood where the clean culture and cover crop system is adopted than where the trees are in sod, and well ripened wood is very essential in Eastern Ontario and the Province of Quebec.

In the American Agricultural and Horticultural periodicals there has been much discussion for a year or more over the splendid results obtained by Mr. Grant G. Hitchings, Onondaga, N. Y., in growing his apple trees in sod and mulching with the cut grass. The fine results obtained by this gentleman have fully justified the discussions on his methods, but it is unfortunate that more prominence has not been given to the special conditions of soil moisture which

are said to exist at his place, making apparently an unfair comparison with the general conditions in that part of New York State, which are such as require clean culture, to conserve moisture. Mr. Hitchings' results, however, prove that where there is abundant moisture, as in many parts of Eastern Ontario and Quebec, his method may be adopted

with good success. At the Central Experimental Farm it has been found that growing clover in the orchards and mulching with it has resulted in a thrifty growth and better fruit, and the writer has seen many orchards in sod producing fine fruit. Every orchardist must, however, study his own conditions, especially those of moisture and soil.

A STATEMENT OF THE QUANTITY AND VALUE OF FRUIT IMPORTED AND ENTERED FOR CONSUMPTION DURING THE FISCAL YEAR ENDING JUNE 30, 1902.

DUTIABLE.					
Dried Apples.....	lbs.	78,717	\$	5,310	
" Currants.....	"	7,294,816		298,278	
" Dates.....	"	1,463,020		31,772	
" Figs.....	"	3,618,073		87,959	
" Prunes.....	"	5,299,799		181,006	
" Raisins.....	"	11,644,657		551,876	
" All other.....	"	1,810,185		132,138	
Nuts, Almonds.....	"	1,062,039		118,377	
" Brazils.....	"	78,050		6,202	
" Pecans.....	"	583,936		35,973	
" Walnuts.....	"	1,107,423		79,022	
" All other.....	"	3,954,311		190,280	
Green Apples.....	bbls.	21,425		85,252	
" Blackberries and Gooseberries....					
" Raspberries and Strawberries....	lbs.	1,064,251		94,139	
" Cherries.....	"	117,574		11,310	
" Cranberries.....	bush.	26,839		52,487	
" Currants.....	lbs.	238		15	
" Grapes (includes Malagas).....	"	1,207,901		69,951	
" Oranges and Lemons, boxes of 2½ cubit feet.....		462,137	1,011,566		
" Oranges and Lemons, ½ boxes.....		51,052	63,367		
" Oranges and Lemons, cubit feet....		240,884	143,966		
" Oranges and Lemons, No.....		9,115	115		
" Oranges and Lemons, barrels.....		17,991	46,466		
Green Peaches.....	lbs.	3,558,358		91,839	
" Plums.....	bush.	32,200		39,057	
" Quinces.....	"	271		357	
" Other.....				60,468	
Preserved, in air tight cans,	lbs.	1,605,053		87,904	
Preserved, in spirits... gals.		360		1,105	
TREES—					
Bananas.....	bunches	765,767		738,168	
Pine Apples, No.....		1,095,949		87,929	
Guanas, Mangos, Pomegranates and Shaddocks Wild Strawberries, Blue and Raspberries.....				6,698	
				812	
					\$4,411,164
EXPORTED—					
Green Apples.....	brls.	516,215		1,566,808	
Dried ".....	lbs.	1,685,460		102,203	
Berries.....				84,010	
" Canned.....				142,972	
Other Fruit.....				26,311	
					\$1,922,304

I beg to send you these figures for Horticulturist. They are very instructive perhaps, and comparison with ten years ago would be interesting.

Ottawa.

G. H. FAWCETT.

A WARNING TO FARMERS AGAINST TRAP LANTERNS

CATCH FRIENDS AS WELL AS ENEMIES

BY

W. H. COARD, LL. D.

DEPARTMENT OF AGRICULTURE, OTTAWA

TRAP-LANTERNS, as destroyers of insect pests, have been recently much discussed in the northern and western portions of Canada as well as in the United States, and by the most persistent and unscrupulous advertising a certain "moth catcher" has been forced into undue prominence, so that fruit growers and farmers have been induced to buy in spite of the protest of those who have thoroughly and scientifically tested such devices. So important has this matter become that the Entomological Division of Cornell University has issued the result of experiments carried out with trap-lanterns during three years, containing in substance the following points:

Many kinds of insects are most active at night and are then often attracted to any light, but there are hosts of insects that fly mostly in the daytime. Most of the grasshoppers, many of the true bugs (like the squash stink bug), all of the butterflies (like the very destructive cabbage butterfly), many of the moths (like the peach tree borer moth), many of the beetles (like the Colorado potato beetle), most of the flies (like the house fly), and many of the hymenoptera (like the saw flies), are day fliers or are not attracted to lights, and these include a large proportion of our common insect pests.

While a trap lantern or "moth catcher" may attract and kill ten or twenty thousand insects in a season, most of the household pests, most of the fruit growers' insect enemies, and nearly all the serious pests of

the gardener or grower of general field crops will fail to be trapped. Only winged adult insects are caught, the more destructive nymphs and larvae are never taken. Usually moths will constitute about half of the insects caught in trap lanterns, and most of these are not pests, only ten per cent. of those that are injurious are females, and these have nearly all laid their eggs. Often as many friends as foes among the beetles will be taken. Nearly one-third of all the insects caught in three months in two "moth catchers," run in Canada, were beneficial, and nearly as many friends as foes were caught in the trap-lanterns. As one of these parasitic insects' friends is capable of killing several injurious insects, the prospect of capturing so many beneficial insects become a serious factor in considering the advisability of using trap-lanterns. It is not so much a question of how many insects as of what kind of insects will be captured.

Experience shows an orchardist or a grower of small fruits has no use for a trap-lantern or a "moth-catcher," because they will not catch enough of the more injurious fruit pests to pay one-tenth of the trouble and expense of running them. Tent-caterpillar moths are the only common fruit insects that are caught in economic numbers, and nine-tenths of these will be males. Codling-moths are not attracted by lights, and only rarely one accidentally falls a victim. The highest record in the Cornell experi-

ments thus far has been eight codling-moths in fifteen nights. The wingless female canker worm moths will not crawl into "moth-catchers," and the lights do not attract the two kinds of apple-borer beetles, the peach-borer moth, plum curculio, or the saw-fly of the currant-worm or pear slug.

As trap-lanterns can have no effect upon fungous diseases, they can never take the place of the spray pump and Bordeaux mixture. Experience has shown that several trap-lanterns set very near every tree in an orchard will not noticeably reduce the crop of wormy apples, or diminish the number of hungry caterpillars feeding on the buds and leaves.

There are instances in which trap-lanterns

may prove useful, such as where some light-loving insects becomes a pest in green-houses, or in the case of some local pest whose period of flight is sharply defined and of short duration. But no one has yet conclusively demonstrated that any insect pest can not be much more effectively and cheaply combated in some other way than by the use of "moth-catchers" or trap-lanterns.

The outcome of all the experiments made everywhere renders it doubtful if these aids help enough in our insect warfare to pay for the trouble and expense of using them, while they certainly do not warrant anyone in recommending their use, or even passively permitting it without protest.

APPLE SCAB FUNGUS

IS ONE OF THE MOST DESTRUCTIVE
PESTS THAT COMES INTO ORCHARDS.

VERY few, except scientists, recognize that apple scab is one of the most destructive pests that comes into the orchard of the apple-grower. The codling moth is supposed to be far more destructive, but such is not the case. Great precautions are taken against the said moth, but little or none against the apple scab fungus. When a picker takes an apple from a limb and finds a scab on it, he gives it not another thought, for that is apparently only a blemish. He imagines that he sees on the apple all the result there is, and he considers it not worth investigating. In fact, this scab does most of its damage to the foliage, and what appears on the apples is merely its secondary work. By the work of this fungus the entire tree is weakened, and the apple crop is cut short year after year. In addition to the fruit being smaller than it should be, the apples fall early, as the tree is too much weakened to nourish

them sufficiently to induce them to hang on. It seems that an apple hangs on just as long as it is receiving nourishment. When nourishment is cut off the apple automatically detaches itself and falls. Anything that causes a check to this supply of nourishment leads to the fall of the apple. The apple scab fungus, by sapping the strength of the tree, brings about this result. Another indication of the presence of the fungus is the fall of the leaves before their natural time. This is brought about in the same way as is the fall of the apple. The nourishment ceases going to the leaves and the stem begins to detach itself from the tree. Thus long before the other trees have dropped their leaves the tree that is badly affected by the fungus named is bare.

When a tree is badly affected it takes more than one year to bring it back to a normal condition of fruitfulness. Thus, if a tree has the disease this year, the crop

next year is sure to be small, for the reason that fruit buds are formed more than a year ahead of the time of their fruitfulness. If the tree is scabby this year the buds will be poorly developed or not developed at all.

No matter how good its condition next year, it will not, in a single season, develop buds and bear fruits on those buds. Spraying is the only remedy, and that must be continued for a number of years.—*Farmers' Review*.

THE FALLING OF GOOSEBERRIES

BY

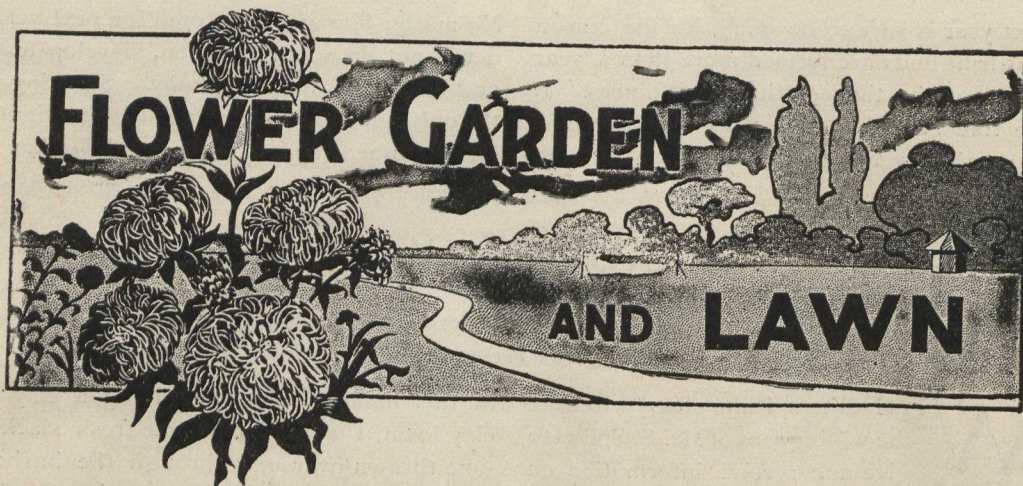
R. CAMERON

NIAGARA FALLS SOUTH

WITH others I am pleased to note the willingness of Mr. S. Spilletto give and receive information on gooseberry culture; and therefore I will give my view of the subject. I attribute the falling to the drouth and heat, coupled with over luxuriant growth of suckers. If a bush produces from one hundred to one hundred and fifty suckers, as Mr. Spillet says they do, I think such cases most extraordinary and I would dig out and burn such bushes, and begin afresh. If the cuttings are made properly they should not produce suckers at all. All the buds, in that portion of the cutting which is supposed to go under ground, should be cut off and only three or four buds near the top should be left to form branches from which branchlets will grow, until the desired number is secured. All the rest should be cut off when pruning. It is not necessary to prune the bushes more than once a year, viz., about the middle of March. If the bushes are trimmed on the spur system, allowing the light and air to pass freely through the plants, the foliage will be healthier, will produce more substance and the plants will be more vigorous—two powerful factors in preventing mildew and the ravages of caterpillars. By this method the weight of fruit will not be less than in the way generally adopted, the berries will be much larger in size, and there will be no drop to the fruit before it is matured. Here I may say that if mildew does show, which seldom happens when the bushes are grown

in this manner, especially if upon clay or clay loam, I would have some fresh slacked lime thrown over and through the bushes, whitening the soil under the plants; this will be found to prevent the ravages of the caterpillars as well as to prevent the mildew. I have grown the English varieties of the gooseberry in this way to five and one half inches in circumference. The English gooseberries will never be grown successfully in this country, particularly upon light soils, and those varieties that will give any satisfactory returns will be found to be the thick skinned ones, such as White Smith, Industry, Crown Bob, Warrington, etc. The clay soil bakes on the surface, and quickly dries down to the roots of the plants if not stirred frequently, and this dryness will cause the fruit to drop; but in such cases, if the surface of the soil under the bushes be covered with coal ashes or a similar material, it will keep the surface open and moist so that the heat and air will pass freely through the soil, a very essential factor for the well being of any plant, and particularly of the gooseberry, which must have its roots kept cool and moist.

The gooseberry is a gross feeder, and thrives best by being fed with a bountiful supply of barn-yard manure water; mulching the plants with ashes, as stated above, will permit the soil to receive the liquid manure freely and save stirring the soil, in after feeding or after rains, to prevent baking.



THE LITTLE GARDENERS OF HAMILTON

SPLENDID WORK BY THE SPECTATOR UNDER AUSPICES HAMILTON HORTICULTURAL AND CITY IMPROVEMENT SOCIETY—PRIZES GIVEN OCTOBER NINTH—GREAT ENTHUSIASM—THE CITY BEAUTIFIED.

THE flower garden competition inaugurated by the Spectator Printing Company and managed by the City Improvement and Horticultural societies, was brought to a most successful ending last night, when, in the presence of an immense audience gathered in the city hall council chamber, the awards were made, along with those in the Improvement socie-

ty's window box competition. It was the most successful annual gathering ever held by the Improvement society, and throughout the proceedings were of a most pleasant character. The prize winners were numerous, and particularly in the case of the children who won Spectator awards the applause, as the little tots came forward to get their money, was most generous.

The Spectator competition for flower gardens was in two sections—one for children, in which the city was divided into four districts, and three cash prizes were given in each to girls and three to boys having the best gardens designed and cared for by themselves. Added to these were several merit awards of seeds and bulbs to those who did not succeed in winning any of the cash. The second division was an adult competition, in which four cash prizes were given for the best gardens* in the whole city. The total amount donated in this way was



FIG. 2471. A STREET CAR USED AS A SUMMER HOUSE, MAIN ST., HAMILTON.

NOTE.—Some photographs in illustration, too late for this number, will appear next month.—ED.

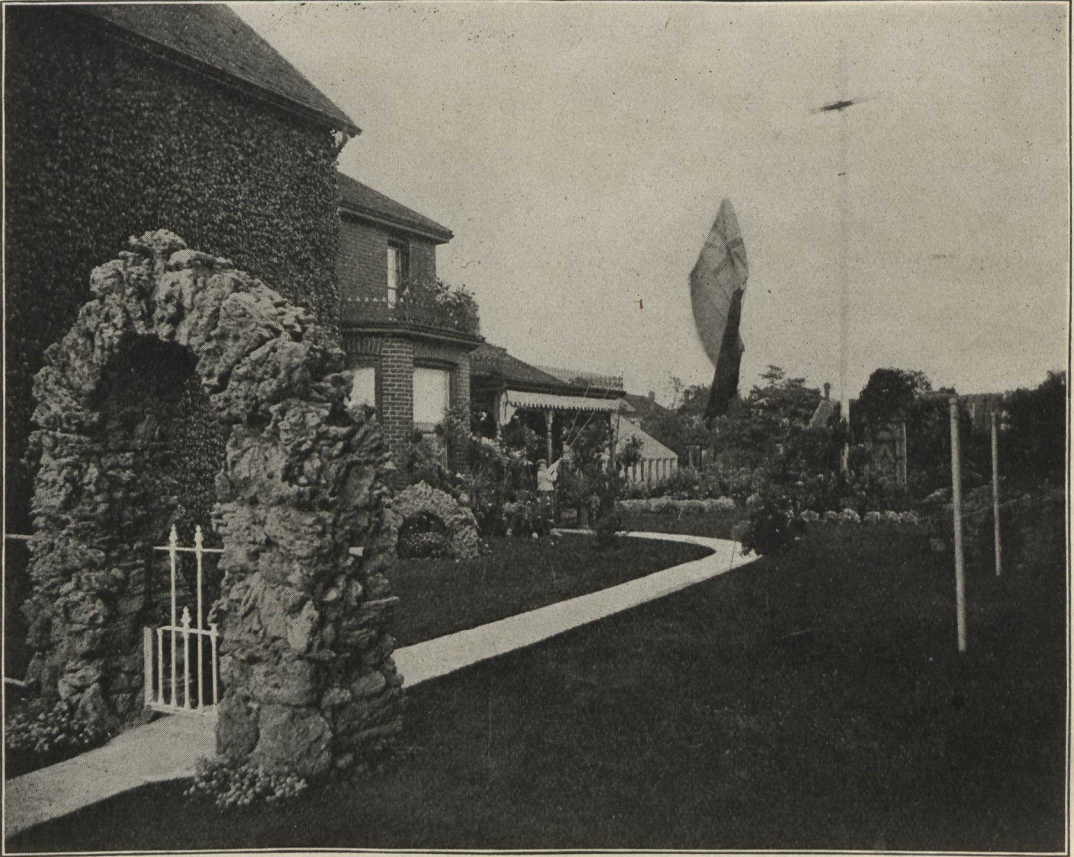


FIG. 2472. GARDEN OF R. S. ANDERSON, HAMILTON.

\$125. The society's window box competition was also a cash prize affair, the total being \$60, and the city being divided as in the Spectator's children's competition. The society also gave a special prize of \$25 to the ward foreman for the best kept city ward.

R. T. Steele, president of the Improvement Society, was in the chair at last night's meeting, and with him on the platform were Mayor Hendrie, ex-Mayor Teetzel, Adam Brown, Rev. Canon Forneret and Newton D. Galbreath, secretary of the society. The council chamber had been most beautifully decorated during the day by members of the society and their friends, and the large audience appreciated the effort that had been made to have all things in keeping for

the occasion. In opening the meeting Mr. Steele made a brief address. He said:

It is only a short time ago since a little meeting was held in this place to see what could be done to beautify our city. The audience to-night shows that many of you are taking an interest in this forward movement, which is making great strides in the United States. Much of the good work being done in places has been due to the ladies. We intend to enlist the ladies in this work before our next season's campaign opens. At our last meeting it was decided to continue the floral competition as previously, and in this we had splendid assistance. The Evans Seed company offered prizes for asters and the Spectator Printing

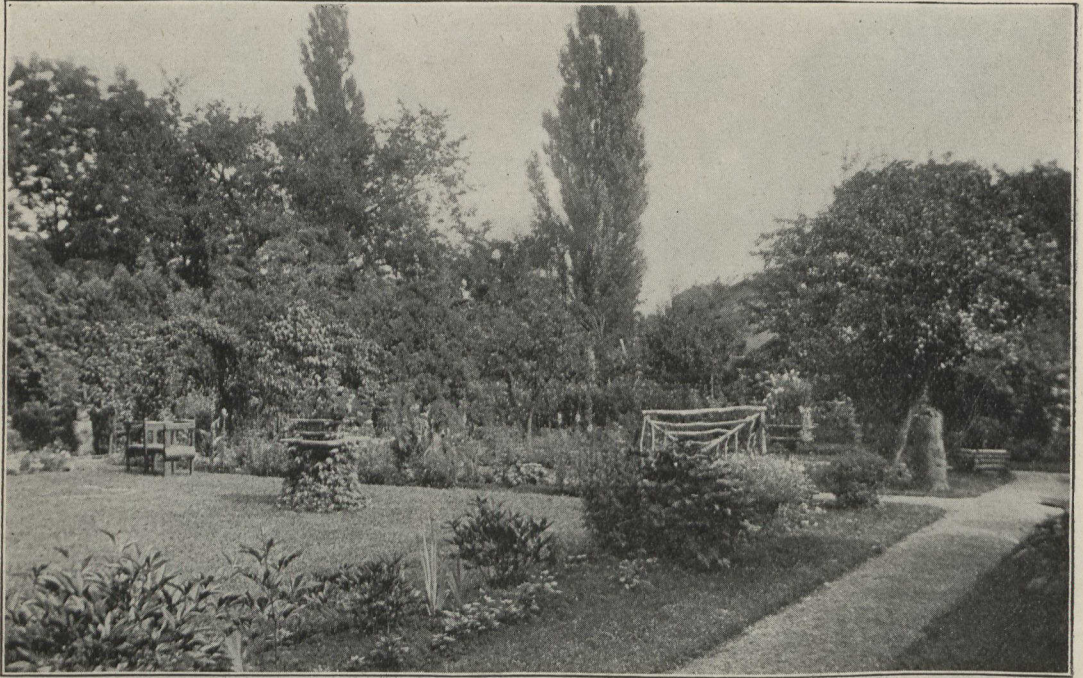


FIG. 2473. GARDEN AT BOWBROOK, RESIDENCE OF ADAM BROWN, HAMILTON.

company generously donated prizes for competitions among the children of the city. Then the society offered prizes for window boxes, and it was perfectly wonderful the number shown through the city during the season. It kept the box manufacturers and the florists busy supplying the demands. All this sort of thing is having its effect upon the children, leading them to a higher and better civilisation. In connection with our work, while we have much to be thankful for, there are some things that have not suited us. Strangely enough, it was from those from whom we expected most support that we got least. The churches and schools showed practically no improvement.

Mr. Steele reviewed the work of the society during the year with the City council. He spoke of the collection of garbage, the gathering of waste paper, the caring of shade trees, the repairing of roadways, the snow cleaning by-law and the weed cutting

regulations. Speaking of the dog nuisance, he thought if the present by-law was carried out strictly it would suit the public generally. He knew of many citizens whose gardens were ruined early in the season by dogs. He also wished that the white wings brigade could be again dressed in white.

Newton D. Galbreath took charge of the prize distribution, and at the outset, explained the system of dividing the city into four districts for the purposes of the Spectator Printing Company competition among children—\$100 in cash and \$25 in bulbs and seeds.

Mayor Hendrie, who took Mrs. Hendrie's place in distributing the Spectator's prizes, apologised for her absence, it being impossible for her to reach the city in time to perform the pleasant task. He thanked the ladies of the Improvement society for the beautiful way in which they had decorated the council chamber. The giving out of

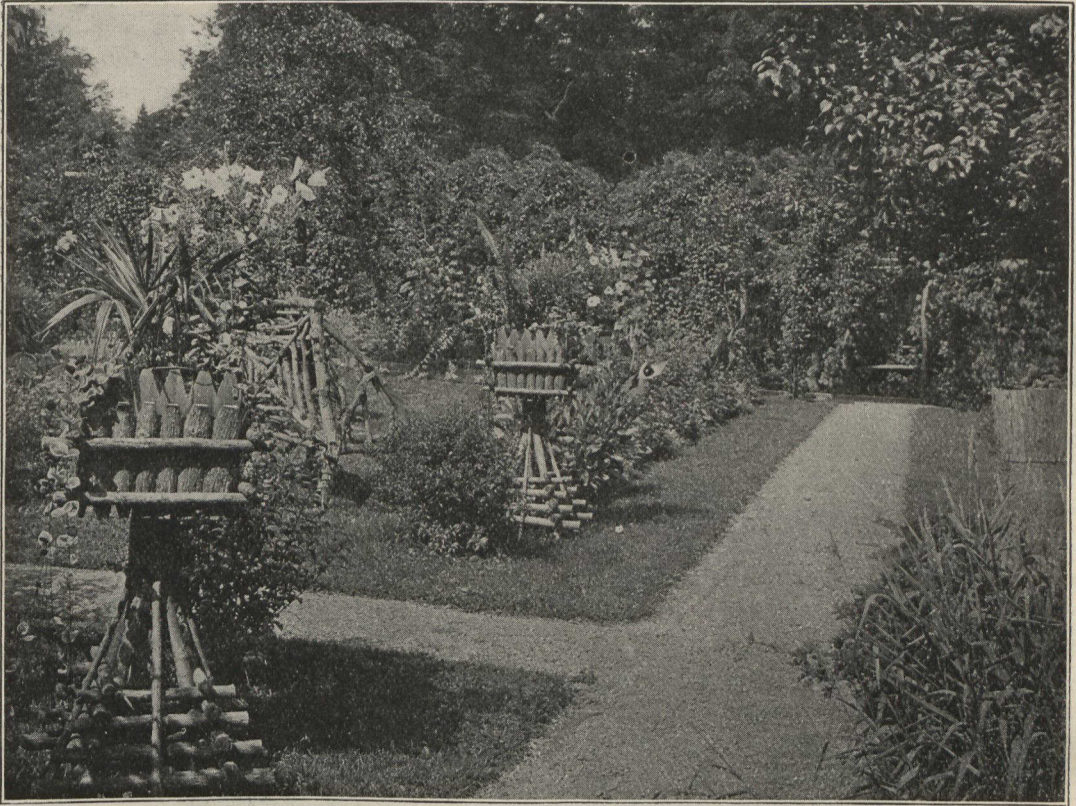


FIG. 2474. GARDEN OF ADAM BROWN, BOWBROOK, HAMILTON.

these awards, was, he said, a particular pleasure to him, for he felt sure that the children, who had thus started out in the right way, would make the members of the Improvement society in future years. The mayor then handed out the prizes to the girls in the Spectator competition, the winners being heartily applauded as they came forward.

Rev. Canon Forneret handed out the prizes to boys in the Spectator contest, and prefaced his pleasant task by some timely remarks. He advised the young people to put their money in the bank or else use it in improving their gardens.

The making of beautiful gardens was the positive side of city improvement. He wanted the children to remember that there was another side. If they would be careful

not to litter paper, peanut shells, etc., on the streets they would be doing a great work also. He then handed out the prizes, the winners being heartily applauded as they came forward.

Adam Brown handed out the prizes in the adult competition promised by the Spectator Printing Company. Mr. Brown was pleased to see so large an audience. It was a great satisfaction to the two promoters of the City Improvement society—the irrepresible and the indefatigable—Mr. Steele was the irrepresible and Mr. Galbreath the indefatigable, and they both deserved all praise for the work they had done in making the wilderness blossom as the rose. In a short speech Mr. Brown impressed upon the audience the great value of the inculcation of a love of flowers among the children of

the city, quoting from Edward Owen Green, the great leader of the flower culture movement in England, as follows :

“Our eyes, our ears, our senses of touch and scent are so many avenues by which various faculties of the mind are reached, exercised and developed. A good and capable teacher recognises this, and works largely by what are called object lessons. Place a child in a garden, amid the perfume and beauty of flowers, the songs of birds, and ripple of running water, the successive development of leaf and bud, and flower and fruit, and you enforce the exercise of his best mental powers by a sweet compulsion of which he is almost unconscious. And what is true of a child is true of the grown man and woman, though the effects of the silent teaching may not be so rapid as the growing child.

“So I come to my moral and my message.

“I say to the teacher of childhood, whether you be father or mother, or other of nature’s monitors, or whether you be one who has taken as a profession the highest of all callings—I say to you—give the children, if you can, a bit of garden ground, or failing that, a few plants in pots or window box to tend. Associate yourself with their work of flower culture. Teach them to do the best for their floral friends, and tell them all you know yourself of the mysteries of plant life. You will find health and growth of mind in your little ones flowing happily from their garden work.”

Flowers were not only a pleasure to those who cultivate them, but were a blessing to the sick and afflicted in hospitals and sick rooms. Those who encourage their children in a love for flowers will not have much cause for worry about them in after years.



FIG. 2475. J. M. HALL'S GARDEN, HANNAH STREET, HAMILTON.

FLORAL NOTES FOR NOVEMBER.

BY

WM. HUNT,

SUPT. GREENHOUSES, O. A. C., GUELPH, ONT.

FLOWER GARDEN.—If the weather is sufficiently open and no hard frosts prevail, this will be found the most suitable time for making new walks, flower beds or borders, as the winter rains and snow will assist greatly in settling the soil down before spring operations commence. Some planting of the hardier varieties of border plants can also be done to advantage. German Iris, Pæonies, Hemerocallis or Lemon lily, Dielytras or Bleeding Heart, as well as Lily of the Valley, are varieties that succeed well if planted late in the autumn. If left until spring, they are often overlooked and forgotten until it is too late for them to take root and give flowering results the same season. It may be advisable, however, to give these late planted varieties a mulching of leaves or long strawy manure later on, before very severe weather sets in. The Iris would probably be better without being covered up or mulched, as mulching is liable to damage and smother the growth, Fibrous

rooted varieties of hardy border plants, such as Gaillardias, Phlox paniculata, Coreopsis, Rudbeckias, etc., succeed better transplanted in early spring.

BULBS

Most varieties of spring flowering bulbs, such as Tulips, Crocuses, Snowdrops, Scillas, Chionodoxas, as well as the Daffodil Narcissus, require very little, if any, covering during winter, excepting in very cold localities, or when the bulbs were planted very late in the season. A light mulching of long strawy manure would be beneficial to these latter if applied before severe weather sets in. Hyacinths, however, in almost all localities, are greatly benefited during severe winters by having a mulching of long strawy manure four or five inches deep spread over the ground where the bulbs are planted. Three or four inches of leaves with a light covering of long grass or manure, or even pine boughs or brush to keep the leaves in place, make a splendid protection for bulbs in winter, and is often easier to be obtained than long manure.

ROSES

Budded plants of even the hardier varieties of out-door roses are better if given some extra covering during winter. Banking the soil up in a conical form about a foot in height around the plant will afford great protection to out-door roses in winter. A mulching of strawy manure or leaves in addition to this would also be beneficial. In localities where the temperature is often for a long period below zero, some extra protection even to this would be advisable. Long straw, an inch or two in thickness,



FIG. 2476. GLOXINIA GRASSIFOLIA.

bound around the tops, would be a benefit where extreme cold prevails, and where, perhaps, the snow fall is light or uncertain. The rush matting used for covering tea chests, wrapped several times around the plant, makes a splendid winter covering for roses or any tender plants, as it to a great extent, excludes moisture, and still allows a circulation of air to the plant sufficient to prevent rot and mildew—the latter often occurring when plants are covered up too closely so as to admit no air at all to the plant.

Roses on their own roots are hardier than budded or grafted plants. Even these would benefit by some protection around about the base of the stem and over the roots, even if the growth was not altogether covered. It is best in all cases, however, to leave the mulching or covering of plants until late in the season, when severe weather is likely to set in, so as to allow the growth of the plant to harden off in a natural way fully exposed to the air.

A very essential point in protecting plants in the manner described is to so arrange the covering, whatever it is, so that it excludes as much moisture from the growth as possible. An old flour or sugar barrel minus the lid, turned bottom up over a tender rose or shrub, is a good protection. Holes should be bored around the sides to admit air, but the top of the barrel, when turned up, should be water tight and intact. Some straw or leaves placed or tied around the plant before it is covered with the barrel would be beneficial.

WINDOW PLANTS

The advent of colder weather means increased fire heat, the latter also meaning an increased aridity or dryness of the atmosphere. The latter condition will probably induce a visit from insect pests, unless precautions are taken to prevent their appearance. Green fly and red spider are most to

be feared, especially the latter, as their appearance is not as easily detected as that of the aphid or green fly. Copious sprinkling and syringing with cold water is the best preventive for the attacks of the so-called red spider. Salvias, Fuchsias, Roses and Carnations are first favorites with this little pest. When first attacked, the leaves of these plants present a whitish, dusty-looking appearance, especially on the underneath side, and the leaves will soon commence dropping unless the plants are regularly and thoroughly sprinkled or syringed once or twice every day. Tobacco water, as recommended in the September number is the best remedy for green fly, although tobacco leaf or stems, or even a cigar thoroughly dried and rubbed into a fine powder and sprinkled on the plants infested with green fly will generally rid the plant of them. The latter application is best made after the plants have been recently sprinkled or syringed, as the tobacco dust adheres better when the foliage of the plant is moist.

FREESIAS

Pots of these that are well started should have the full benefit of the sun and sufficient water to keep the soil moist, but not sodden. Freesias do not like liquid manure, and do not require it if the soil they are in is only of a fair average fertility as generally used for pot plants.

REX BEGONIAS

Plants of these that have, perhaps, been resplendent with their beautifully marked foliage, will generally show rapid signs of decay towards winter. This is quite natural in these plants at this season of the year and is indicative that the plants require a period of partial rest, and it is best to allow them this period of partial rest when the leaves present the appearance mentioned. It is useless to deluge the plants with water at the roots as is often done when the plants

show signs of decay. By withholding water gradually from the roots and barely keeping the soil moist, the fleshy rhizomes and stems, and perhaps some of the leaves, may be kept in fair condition until spring or early summer, when the plants can be repotted, or, if that is not necessary, the plants will show signs of new growth as the warm summer weather approaches without repotting. Rex Begonias, and in fact all summer flowering and foliage Begonias, require to be kept in a temperature not lower than 45° or 50° when resting in winter. A slightly lower temperature than the plants have been accustomed to, and only sufficient water to barely keep the soil in the pots moist, are the conditions that induce this partial resting period so essential to almost all perennial plant life at some season of the year. Rex Begonias should never have

their leaves sprinkled with water in winter, as it tends to spot and rot the foliage.

GLOXINIAS, TUBEROUS BEGONIAS, FANCY CALADIUMS AND ACHIMENES

All of these should now be resting and the soil left quite dry until time to start them in the spring. I have found that leaving these in the pots undisturbed all the winter is better than taking the bulbs or tubers out of the soil and packing them in sand or charcoal. Where large quantities are grown, it might be necessary to knock them out of the pots to economize space, but where only a few are grown, it is very easy to stand the pots back in a dry place on a shelf, where no drip or water can reach them. A temperature of 55° will suit all but the Tuberous Begonias when dormant; these latter I have found to keep better in a temperature of about 40° to 45°.

THE TRAILING ARBUTUS—HAS IT A PARTNER?

IN the September number of the Horticulturist Mrs. Gilchrist has a good word for the Trailing Arbutus (*Epigæa ripens*). She asks, "can it be cultivated in the garden," and answers, "certainly." I write this note to invite reports of experience upon the subject. The result of my experiments indicates the conclusion that it cannot be successfully cultivated in every garden. The failure of repeated attempts to introduce it into my own garden and into the woods around London led me to suspect that it may, like some of its congeners among the heathers, have entered into a partnership with some species of mycorrhiza. In the absence of the companion of its roots it leads a languishing existence through a season or two and then perishes. The directions given by Mrs. Gilchrist for transplanting the Arbutus do not discredit the supposition that it is dependent on a root partner. It is not improbable that some gardens possess conditions favorable to the growth of the plant

and its mycorrhiza if it has one. "The good ball of earth" carefully lifted with the plant would carry both. I should like to know whether any one has succeeded in growing and increasing this plant from seed or clean roots in a garden distant from where it is found naturally. "Like the thrush," she says, "it belongs to the woods." That's a good touch. After all it is no great loss if we cannot get the Mayflower to grow in the garden, for there it is like a wood-bird in a cage. The delight with which we recall the plant is not due alone to its color and fragrance. In the pleasantest days in the year we greet it in the most lovely parts of our beautiful woods. The whole situation stirs the soul and the senses, and we vainly attempt to carry the pleasure away with us by filling our arms with the fragrant sprays of the dainty trailer. You must go to the part of the woods it selects for its home to fully enjoy the Trailing Arbutus.

London.

JOHN DEARNESS.

ADDRESS TO THE CANADIAN HORTICULTURAL ASSOCIATION

BY PROF. H. L. HUTT, O. A. C., GUELPH, ONT.

I AM pleased to have this opportunity of addressing your Association, because I have a few fatherly suggestions to offer, which I think are of importance to you.

In the first place I wish to suggest a change in the name of your Association. Your membership, I am told, is made up largely of the professional florists of Ontario. Why not call yourselves then, the Ontario Florists Association? Such a name defines your position among the many organizations in this country better than any other. If you had in your Association members from all of the other provinces there might be no objection to the use of the term Canadian instead of Ontario, but not having these, you are making the mistake of spreading over too much ground, a mistake which florists as a rule are not guilty of. A good strong provincial organization would, I think, carry more weight than a weak organization spread over the whole Dominion. And the fact of your being a Provincial organization need not in the least prevent your having members from any of the other Provinces.

There is one other reason why I think your Association should fall in line with the other Provincial Associations, and that is because you might then, like them, look for a little assistance from the Provincial Government in aid of your work. I may say, however, that I am not authorized by the Minister of Agriculture or any of his Department to make this statement, but do so entirely upon my own responsibility. If you can show that your Association represents one of the important horticultural in-

dustries of the Province, that is endeavoring to educate, uplift and benefit the people along the line of beautifying their homes, I see no reason why you should not ask the Department of Agriculture for some substantial assistance in aid of such work as well as the

Fruit Growers' Association,
Dairymen's Association,
Horse Breeders' Association,
Sheep Breeders' Association,
Swine Breeders' Association,
Poultry Associations,
Beekeepers' Association,

and about 200 Agricultural and Horticultural Societies. Most of which are probably doing good work, but none of them doing any more for the general welfare of the people than you could or should do, if you put yourselves about it.

My preference for the term Florist instead of Horticulturist is, because this is an age of specialization rather than generalization. The term Horticulture is a broad general term, which includes fruit growing, vegetable gardening, landscape gardening and horticulture. For nearly thirty-five years we have had an active Provincial Fruit Growers' Association. You might be proud of being known as the Ontario Florists' Association. There is plenty of room for a live Provincial Market Gardeners' Association, and all of these would properly be known as Horticultural Associations. This is enough on this point at present. I suggest the change of name because I think it would be for your benefit.

Now I wish to say a few words with reference to your relation to what are known

as the Local Horticultural Societies. We have now in this Province over fifty horticultural societies, most of which have been organized during the last few years through the efforts of the Ontario Fruit Growers' Association. The greater number of these societies are town societies, and they are quite properly called Horticultural Societies, because their membership, which now numbers 5000, is largely composed of amateurs interested more or less in fruit growing, others in vegetable gardening, but by far the greater number are particularly interested in floriculture.

These societies are doing good work in fostering a love for flowers and giving the people information about how to grow them. It is along this line that you as an association and as individuals might do good work in assisting them. You are both interested in the growing of plants and flowers, the chief difference between you being that they are amateurs and you are professionals. They are growing plants for pleasure while you are doing it for money, and the more pleasure there is in it for them the more money there is in it for you. It is in your interests therefore, from a business standpoint, to stimulate trade by encouraging the amateur in his love for flowers and by teaching him how to care for them. I have heard some professionals say that they did not believe in telling the amateurs how to grow flowers, that this was giving away trade secrets, but if the amateur's plants failed, he would be willing to sell him more. I can tell you this is a very short sighted policy. The secret of the professional's success is in increased demand for plants and flowers. This increased demand depends largely upon the pleasure that the amateur derives from them. And the more successful the amateur becomes as a grower, the more plants he will want. You are widening your money by giving information about growing plants.

There are a number of ways in which you as leaders in floriculture may assist the ama-

teur. In the first place, become a member of your own local horticultural society. If there is not one in your locality, organize one as soon as possible. Encourage the members from time to time to bring out a good display of flowers at your meetings and give all the information you can about them. Whenever there is a fall fair or exhibition held in your locality get your horticultural society to co-operate and bring out as fine a display as possible. Most of our fall fairs are weak along just those lines where you can do the most to strengthen them.

I have spent a good deal of time during the last year in preparing a model prize list for fruits, flowers and vegetables, which, if adopted generally by township and county fairs, would help very much to encourage horticulture along the lines mentioned. These lists will be published in a short time, and may be obtained from Mr. G. C. Creelman, Secretary of the Fall Fairs Association, Parliament Buildings, Toronto. Get one of them, examine it carefully, improve or modify it, if you think necessary, to meet the requirements of your exhibition. Get your Society to adopt it, and encourage all the competitions you can among your amateurs. Do not make the mistake of trying to win all the prizes yourself. That might be gratifying in one sense, but it would pay you better to get as many amateurs competing as possible, and you can make your little pile furnishing them with plants.

In conclusion, I would ask you to give all of us the benefit of your experience by contributing an article once in a while to the *Canadian Horticulturist*, which goes to all the members of the local horticultural societies. Our friend, Mr. Hunt, has been doing nobly in this respect for the past two years, and his articles have helped your trade much more than you imagine. But a number of short articles by different members of your Association would be welcomed, not only by the editor, but by a of us.



The Canadian Horticulturist

COPY for journal should reach the editor as early in the month as possible, never later than the 12th. It should be addressed to L. Woolverton, Grimsby, Ontario.

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution plants and trees.

REMITTANCES by Registered Letter or Post-Office Order addressed The Secretary of the Fruit Growers' Association, Parliament Buildings, Toronto, are at our risk. Receipts will be acknowledged upon the Address Label.

ADVERTISING RATES quoted on application. Circulation, 5,500 copies per month. Copy received up to 20th.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events or doings of Horticultural Societies likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of Horticulturists.

ILLUSTRATIONS.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, etc.; but he cannot be responsible for loss or injury.

NEWSPAPERS.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

DISCONTINUANCES.—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrearages must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post-Office address is given. Societies should send in their revised lists in January, if possible, otherwise we take it for granted that all will continue members.

ADDRESS money letters, subscriptions and business letters of every kind to the Secretary of the Ontario Fruit Growers Association, Department of Agriculture, Toronto.

POST OFFICE ORDERS, cheques, postal notes, etc., should be made payable to G. C. Creelman, Toronto.

ANNUAL MEETING OF THE ONTARIO FRUIT GROWERS' ASSOCIATION.

The next annual meeting of this Association will be held at Walkerton, Ontario, on December 1st, 2nd and 3rd, 1902. As the fruit-growing industry has become so important in this country, it has been deemed advisable to devote the entire time of the Convention to matters pertaining to fruit, but realizing at the same time that the subject of Floriculture, the growing of Plants for the Home and Home Grounds, Care of Lawns and of Gardens, are also important, arrangements have been made whereby separate sessions will be devoted to this work. The best talent that can be procured has been engaged for the meetings, and it is expected that this year will mark a new era in the progress of the Ontario Fruit Growers' Association.

PROGRAMME.

On Monday afternoon, December 1st, there will be a meeting of the Directors at 3 o'clock, when the Secretary will read his report of the year's work, and business matters pertaining to the management of the Association will be discussed. At this meeting each of the Directors will present a written report of the year's work in Horticulture in his district.

On Monday night the Minister of Agriculture, Hon. John Dryden, will address the meeting, as will also Dr. James Fletcher, of the Central Experimental Farm, Ottawa; Prof. Wm. Lochhead, of the O. A. C., Prof. John Craig, Cornell University, Ithaca, New York, and others.

On Tuesday morning, at 9.30, the fruit

display of the Fruit Experiment Stations will be arranged, after which the meeting will take up the reports of committees on New Fruits, San Jose Scales, Codling Moth and Transportation.

The afternoon of Tuesday will be devoted entirely to the subject of Apples. "**Varieties**" will be discussed by Prof. John Craig, of Cornell University; Mr. L. Woolverton, G. C. Caston, Craighurst; W. H. Dempsey, Trenton; Harold Jones, Maitland; T. H. Race, Mitchell, and others.

The subject of "**Packages**" will be introduced by Mr. W. H. Bunting, St. Catharines, and Mr. A. McNeill, Acting Chief Fruit Division, Ottawa. The **Grading and Packing** of apples will be taken up by Mr. McNeill, Mr. Carey and Mr. Lick, all Dominion Fruit Inspectors. These gentlemen will at the same time explain the workings of the "Fruit Marks Act."

"**Markets and Marketing**" will be discussed by Mr. E. D. Smith, Winona; A. W. Peart, Burlington; H. W. Dawson, Toronto.

"**Controlling Soil Moisture in the Orchard**" will be the subject of a paper by Prof. J. B. Reynolds, of the O. A. C., Guelph.

On the evening of Tuesday, December 2nd, Prof. John Craig, Cornell University, Ithaca, N. Y., will be on the programme, also Mr. C. C. James, Deputy Minister of Agriculture; Prof. H. L. Hutt, and Prof. Wm. Lochhead, of the O. A. C., Guelph, and Mr. Wm. Orr, Fruitland.

Wednesday morning will be devoted to the work of the Fruit Experiment Stations, when the Director of each Station will be present and give an account of the work done at his Station, the varieties recommended for their localities, etc. The information thus imparted ought to be extremely valuable to the fruit growers of the Province.

On Wednesday afternoon unfinished business, the St. Louis Exposition, and such

matters as have been crowded out will be taken up, and if the work of the Convention is finished the meeting will then adjourn.

FLORICULTURE.

On Tuesday afternoon and Wednesday morning separate meetings will be held, where the programme will be devoted entirely to Floriculture. Mr. Wm. Gammage, London; A. H. Ewing, Woodstock; J. H. Dunlop, Toronto; Hermann Simmers, Toronto; T. H. Race, Mitchell; Arch. Gilchrist, Toronto Junction; Dr. James Fletcher, Ottawa; Prof. Macoun, Ottawa, and Prof. H. L. Hutt and Mr. Hunt, of the O. A. C., Guelph, and others have been invited to take part at these sessions.

With such a formidable array of talent there should be no doubt about the success of both meetings, and we trust that as many members of the Horticultural Societies throughout the Province as possible will avail themselves of the opportunity and attend the meeting at Walkerton.

G. C. CASTON, Craighurst,
President.

G. S. CREELMAN,
Parliament Buildings, Toronto,
Secretary.

GRAFTING WAX.—The following is Luther Burbank's recipe:—One pound tallow or raw linseed oil. Two pounds beeswax. Four pounds resin. Slowly melt all together, stir well, and when partially cooled pour into pans which have been moistened or oiled to keep the wax from clinging too tightly to them. For use it should be melted and applied carefully over all exposed cuts and open cracks around the grafts. A small paint-brush is the most convenient for this purpose. It can be applied safely much warmer than can be borne by the hand, but care should be used not to have it very closely approaching the boiling point of water.

HORTICULTURAL SOCIETY EXHIBIT.—Mr. W. W. Hillborn, of Leamington, writes that the Leamington Society has secured several fine exhibits of fruit from local fairs and has forwarded them to be held in cold storage at London, Ontario, until the proper time and then will send them up to Walkerton to be exhibited at our annual meeting.

ALL OUR EXPERIMENTERS are also invited to be present at our Walkerton meeting, and will come prepared to give much information about new varieties of fruit which they have under test.

THE CHARLOTTETOWN, P.E.I., EXHIBITION seems to have included an unusually fine display of apples. The Maritime Farmer says : It is apparent that in the future and the very near future at that, Prince Edward Island must be reckoned with in the fruit markets of our country. It was not alone the question of quality but quantity as well. This last is possibly a source of actual weakness, as farmers have in the past been largely at the mercy of the salesmen in choosing varieties and have in consequence a multiplicity

of sorts which are little known and of less value for export purposes.

There was one group which could always be found gathered around these tables in the centre of the building. It consisted of Rev. Father Burke, the aggressive President of the Association, beaming on everyone as the surprise of the visitors was voiced ; Secretary Dewar ; Inspectors Richard Burke and G. H. Vroom, who have this summer been strong in preaching the gospel of good orcharding on the Island ; Senator Ferguson ; and John Robertson, of Inkerman, the largest orchardist of the province, we are told. These men have a right to be enthusiastic. The possibilities of orcharding there are beginning to reveal themselves and the future is one of great promise. Father Burke informed us that next season will witness a readjustment of their prize list and a weeding out therefrom of all but the commercial varieties. He argues, and is supported by his executive, in favor of an exhibition work which shall not only be illustrative but educative in that it will endeavor to discourage orcharding which is other than of the dollars and cents description. This is as it should be.

Question Drawer

The Ontario and the Crimson Beauty Apples.

1316. SIR,—As a life member of the American Pomological Society I am anxious to know more about two Canadian apples : (1) The ONTARIO. How does its market value, in desirability or popularity, compare with the Northern Spy or the Wagener, also in keeping quality? Both succeed here, bear early, and the Wagener will keep till spring. I am anxious to know if the Ontario is better than either for market. (2) The CRIMSON BEAUTY. What is its rank in excellence with other popular apples for fall and winter, and what nurseries keep these?

Hood River, Oregon. HENRY T. WILLIAMS.

We do not think Ontario quite equal in beauty or even in quality to the Spy, nor is it quite as good a keeper, but the tree begins

bearing so much earlier that you get paid for the investment before the Spy begins. Wagener is inferior to both commercially. The fruit grows uneven in size, and is troublesome to handle for market, because it ripens so rapidly.

The Crimson Beauty, known also as Scarlet Pippin and Crimson Pippin, is a seedling raised near Brockville, and not only beautifully colored, but an exceedingly handsome dessert apple. No doubt these varieties can be purchased either from E. D. Smith, Winona, or Stone Wellington, Toronto.

A Curiosity.

1317. SIR,—I send by post, herewith, a specimen of the product of a curious peach (curious at least to me), tree, for you to submit to an expert or some authority on fruit, to examine and say if it is worth cultivating; the tree is an accidental self sown one, origin unknown; the fruit inside the skin is of a deep red color, unlike any that I have ever seen, and seems to indicate a new variety, but possibly it may be common to others although new to me.

Pardon my troubling you with it, perhaps I should have sent it to O. A. C., Guelph, for examination and report.

A. VIDAL, Sarnia.

This is certainly a singular freak of nature, but, in our opinion, of no commercial value.

To Destroy Poplar and Locust Trees.

1318. SIR,—We have some silver-leaf poplars and locust trees we wish very much to get rid of, root and branch (roots particularly). Could you advise us of some means of killing them before cutting down.

H. J. G.

We would advise girdling the trees toward the end of June, and then digging them out by the roots in the fall. This is easier done if the top is not cut off, for a rope can be attached to it, and, as the roots are cut, the whole tree is the easier pulled over.

A Winter Dessert Apple.

1319. SIR,—Which is the best late winter dessert apple for this section? I want one of good quality for home use. The Ben Davis has been recommended to me, but I understand the quality is not the best. I prefer a large apple.

Carleton Place, Ont.

THOS. McQUAIG.

We would think that McIntosh Red would please you as well as any for dessert purposes; it is larger than Ben Davis, and of special value for eating. Another very fine apple for northern sections is the Wealthy, which unites beauty and size with very good quality, though in southern sections it ripens rather early.

The Phoenix Apple.

1320. SIR,—I notice in the July number, Mr. Carey recommends the Phoenix apple. Would you please describe this apple for me. I can find

no trace of it in either the Experimental Farm Reports or in the Nursery Catalogue.

Berwick, N. S.

A. J. TURNER.

This apple is not grown to any great extent, unless in a very few sections; perhaps it is as well known in some parts of Illinois as any where, and in some parts of Ontario. The buyers seem to like it, because it makes very few seconds in packing. Downing thus describes it: Fruit medium, roundish, slightly oblate, skin light yellow, faintly shaded, splashed and striped with rich red, and with a few light and brown dots. Flesh yellowish, coarse, moderately juicy, sub-acid, good. December to March.

A Disputed Variety.

1321. SIR,—I enclose to your address in a box three apples for identification. They were entered at the Clarksburg exhibition for Ribston, but the judges say they are not. They are under protest, and were given to me for identification. Will you please name them?

The apples are probably the Red Russet. They are quite distinct from Ribston, a variety which we have grown at Maplehurst for many years.

Allenby's Seedling Apple.

1322. SIR,—I am expressing you a basket of seedling apples grown on a tree amongst shrub bushes in a field adjoining my garden and orchard in Galt. In the opinion of several the apple is of superior quality for dessert and for cooking as well. The tree is wonderfully productive, loaded down with fruit just now ripe. It was gnawed by rabbits some years ago when it was quite small, and is dwarfed in height, with branches spreading and bending down amongst the grass. No spraying has been done, and the fruit is clean and practically free of worms. As it is a seedling I would like you and your friends to examine it and tell me whether you think it would be valuable to apple growers. If you do I propose calling it the Lindum, the Latin name for my native city, Lincoln, in England.

Galt.

F. G. ALLENBY.

The apple is a very handsome one, somewhat resembling the Maiden's Blush in appearance, though less oblate. The skin is white, with bright red blush in sun and duller red in parts. The stem is about an inch long, set in a remarkably deep regular cav-

ity, and the calyx is large, open and set in a large abrupt wrinkled basin. The flesh is snowy white, tender, almost butter tincture, fine grained, fairly juicy, and of refreshing agreeable flavor. * We should count it good as a dessert apple, and very valuable in the amateur's garden, but too tender for export.

Top Grafting.

1323. SIR,—Could large apple trees, of an undesirable variety, be grafted to form a new head, and, if so, how would you proceed?

Carleton Place, Ont.

THOS. McQUAIG.

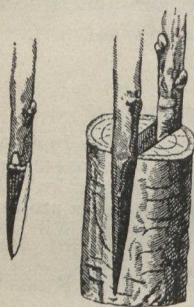


FIG. 2477.

Certainly, old trees of undesirable varieties, if still vigorous, may and should be top grafted; indeed it is a foolish waste to allow trees to continue bearing unsalable fruit, when in two or three years they can be made to produce salable kinds.

The best time to undertake the work is in May or June. Limbs in various parts of the head, not over two inches in diameter, may be sawn smoothly off, and split with a grafting chisel to receive the beveled end of the scion as shown in our engraving. One important point is to so unite the cambium or inner bark of the parts that the growth may continue. Care must always be taken to have the scions cut well in advance, before the buds have begun to push. After the graft is set, it is important to protect the cut surfaces from the air by grafting wax.

Plum Differences.

1324. SIR,—I to-day take the liberty of mailing you a sample of two varieties of plums, and should be much pleased if you would name them. The smaller was bought for Shropshire Damson from E. D. Smith, Winona, Ont., but the judge of fruit at the Charlottetown exhibition gave the prize to a plate of similar plums entered under the name of Blue Damson. The larger is locally known as the Old Blue and has been in cultivation for a great

many years and comes true from pits and suckers. It is a great bearer, and before the advent of the knot every farmer who chose to plant a few trees had abundance of plums, but the tree is very susceptible to the knot and is now very little grown. A plate of this variety was awarded first prize as Shropshire Damson. To me it appears more like a small variety of prune, probably introduced by the early French or English settlers, as it is a free-stone.

What do you think of Spaulding as an early plum? Is it as hardy as the ordinary Domesticas, such as Bradshaw?

What are the distinguishing points between McLaughlin and Jefferson? Also between Imperial Gage and Huling's Superb?

By answering the above questions in the November issue of the Horticulturist you will greatly oblige.

Lower Montague, P. E. I.

D. J. STEWART.

The small samples sent by our correspondent are Shropshire Damson, if the trees of that variety in our experimental plot are correctly named; but the other samples were too much smashed to identify.

The Spaulding is of good quality, and so far as we know quite as hardy as Bradshaw.

Jefferson and McLaughlin considerably resemble each other, but the stem of the former is shorter and the stone is free, while that of McLaughlin is cling.

Huling's Superb is a larger sized plum than Imperial Gage, and a clingstone; while the latter is nearly free and rather better in quality.

New Apples.

1325. SIR,—I am sending you by this day's express a box containing several apples, as follows:

No. 1 Seedling, submitted by Miss Dunlop, Price's Corner, post office, Township of Medonte; two samples.

No. 2 Seedling, grown by C. L. Stephens, Orillia; two samples.

Mr. Race, whom we had at our Fall Show, approves of both in their season and for this section. No. 1 is about 10 or 11 years from seed, and bore a few apples last year, and a fair crop this year. No. 2 is 7 or 8 years from seed, or perhaps only 6 years. It was brought to me quite a small tree 5 years ago, it has made a thrifty but not vigorous growth; this year it bloomed for the first time, and bore 5 12-quart baskets of fruit. The samples of Nos. 1 and 2 have been picked since the 18th of September, and have been in my cellar since the 22nd. I also send a few varieties for which I would like to get correct names.

No. 3 has come to me under three different

names, "Quebec Winter Sweet," "Jersey Sweet," and "Princess Louise," in each case the grower being quite sure that he bought tree under the name mentioned; two samples.

No. 4 is called by each of two persons, "McIntosh Red" and "Princess Louise." Is it either? It looks like McIntosh as shown here.

No. 5 is called by growers "Quebec Winter Sweet," but hardly looks like a winter apple.

No. 6. The scions were given to me as "Princess Louise." What is it?

I shall endeavor to keep samples of the two seedlings until the December meeting at Walkerton, and submit them there; and I shall be very much obliged if, in the meantime, you can give me the correct names of the others.

Orillia.

C. L. STEPHENS.

No. 1 is certainly a beautiful apple. It is large, regularly formed, and beautifully striped all around with rich bright red on a

yellow ground; the flesh is very white, with slight tints of red near the skin; it is fine, and almost tender in texture, fairly juicy, and of fairly good flavor, though scarcely tart enough for the taste of many people. Probably this apple deserves further testing as a fancy fall apple.

No. 2 is a good apple, but in our opinion scarcely striking enough in appearance and distinctive in flavor, take a place with varieties already cultivated.

No. 4 is McIntosh Red.

No. 5 is a total stranger. None of the apples at all resemble Prince Louise (or Woolverton).

Notes from the Horticultural Societies

Regina, N. W. T. The first annual flower show, under the auspices of the Assinoboia Horticultural Society, was held on the 21st of August last, and was a complete success. The tables of the hall were covered with red, white and blue bunting, and flags here and there added to the appearance of the room. What might be termed the national flower of the west—the beautiful and fragrant sweet pea—was shown in many colors and tints, among them being one which attracted very great attention. This was "Burpee's Little Fairy" grown by Mrs. R. M. Napier. It is altogether different from other sweet peas and resembles somewhat an apple blossom half opened. Mrs. R. E. Tennant's first prize collection and the thirty-four varieties shown by His Honor Lieut. Governor Forget were also very beautiful. Eight beautiful varieties of hollyhocks were also included in the Government House collection, while several trees and shrubs from the conservatory lent to the decoration of the large centre table.

Another handsome display was that made by the Government Offices, which included a delicate and very beautiful wreath.

Among other notable plants were an asparagus shrub shown by Mr. G. Michaelis, a lemon tree bearing fruit by Mr. R. B. Ferguson, and a sassafras shrub grown by Mrs. Wm. Rothwell, from seed sent from Honolulu.

There was a good attendance at the musical promenade in the evening, when the orchestra, under the direction of Mr. J. S. Demis, rendered a number of pleasing selections. The officers and members of the society are deserving of heartiest congratulations on the splendid results of their efforts.

Napanee. SIR,—We had a very successful "Flower Carnival" the other night, and the booth

where we had our tea and cocoa looked so exceedingly lovely we had it photographed. I am sending you a copy, thinking you might find a place for it in the Horticulturist, and I enclose you a clipping from a local paper, giving an account of the carnival. Feeling sure you take an interest in your affiliated society, you will be glad to hear that it is acknowledged on every side that our Society has done wonders in improving our town. The Society continues in a very flourishing condition, and still has for its president, Yours sincerely,

ISABELLA A. WILKISON.

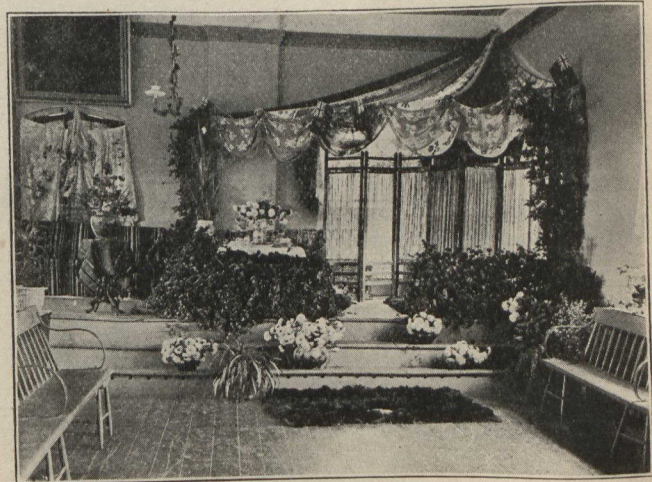


FIG. 2478. BOOTH AT NAPANEE FLOWER CARNIVAL.

FLOWER CARNIVAL.

"The Horticultural Society of Napanee held its annual flower show in the town hall on Friday last, afternoon and evening. The exhibits of cut flowers and pot plants were very varied, and interesting as showing a development of an improved taste in the selection of plants to beautify the home since the inception of the society some years ago. Some magnificent blooms in cut flowers were much admired, as were most of the well developed pot plants. Great pains had been taken by the ladies to arrange the flowers so as to show them off to the best advantage, and their taste was approved by the visitors. The town hall is usually rather a dull room, but on this occasion it was converted into a bower of beauty, made gay with choice blossoms of every conceivable shade of color, set off by foliage of different shades of green and various habits of growth. In one corner was a floral booth, surrounded by an artistic fence of flowers and vines. In this pretty spot delicious tea and cocoa were served under the supervision of Mrs. J. L. Boyes and Miss Belle Pollard, assisted by Mrs. Herrington and Mrs. F. F. Miller. The President was assisted in the decorations by the directors and many of the members, more particularly by Mesdames J. L. Boyes, Rockwell, Gordon, Clarke, Gordanier, Flach, Herrington, McNeil, and Misses Mill, Belle Pollard and Wigmore. The Horticultural Society officials have to thank Mrs. Moodie, of Toronto, and Miss Sinclair, of Orillia, in assisting Mr. Hart in a very good musical programme, which added very much to the enjoyment. Mr. Hart gave various selections on his pianito."

Kincardine.—I enclose you a photo of a branch of peaches grown in the garden of Mr. E. Miller, who has been a member of our society from the beginning. This branch was brought to our exhibition on the 5th of October, bearing twenty-four

peaches. The total product of the tree was over one bushel and this is only the second year of fruiting. You see after all we are not too far north to grow this luscious fruit.

JOSEPH BARKER, Secretary.

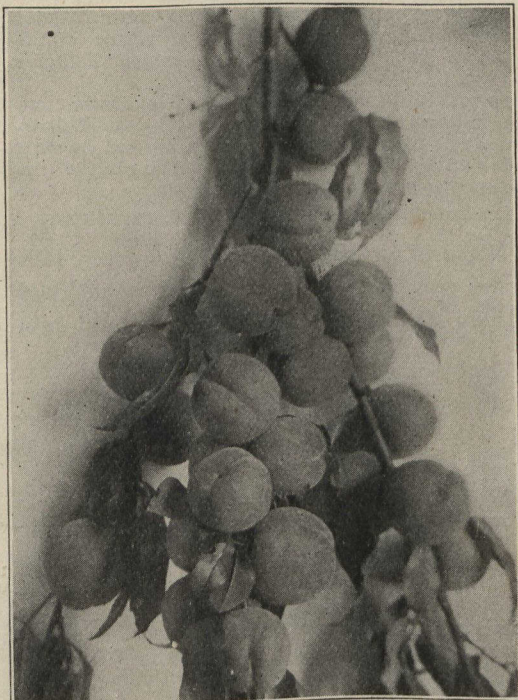


FIG. 2478. A PROLIFIC BRANCH.

THE APPLE MARKET ABROAD.

NEW YORK, Oct. 30, 1902.

The cables from the foreign markets for apples show a better feeling in fancy fruit, but a large portion of shipments are arriving in poor order. Keiffer pears are quoted low and unsafe to ship. The prevailing prices abroad are:

Liverpool—Baldwins, 12s to 15s; Russets, 11s to 14s; Spys, 11s to 14s; Greenings, 10s to 13s; Kings, 13s to 16s; Wagners, 12s to 15s; Seeks, Spitzenberg, Ben Davis, 10s to 13s; Newtons, No. 1, 21s to 25s; No. 2, 15s to 17s; No. 3, 12s to 14s. Only choicest fruit brought the high quotation. The inferior quality of apples is having a bad effect upon the market, and damaging prices gen-

erally. Dealers are afraid to touch fruit, as heavy losses have been sustained lately. Keiffer pears, 7s to 10s, in barrels, are arriving in bad condition. Boxes, 4s to 6s, good order. California Newtons, in four tier boxes, 9s.

Glasgows—Kings, 16s to 20s; Baldwins 14s to 16s; Greenings, 11s to 13s; Ben Davis, 13s to 16s; Newtons, No. 1, 20s to 23s. There is good demand for sound clear apples.

London—Baldwins, 13s to 16s; Greenings, 11s to 14s; Ben Davis, 12s to 15s. California Newtons, in boxes, 9s to 10s.

Hamburg—There is a great demand for superior sorts of apples in this market, prices ranging from 11s to 17s.

BOOKS FOR FRUIT GROWERS.

FRUIT, FLOWERS, ETC.

Apple Culture, Field Notes on. Bailey.	\$0.75
Bulbs and Tuberous Rooted Plants. C. L. Allen.	1.50
Bush Fruits Prof. A. Card.	1.50
Chrysanthemum Culture. Morton. Cloth.	1.00
Chrysanthemums, How to Grow.25
Cider Makers' Handbook. Trowbridge.	1.00
Cranberries, Cape Cod. James Webb. Paper.40
Cranberry Culture. White.	1.00
Crops, Spraying. Clarence M. Weed.25
Dahlia, The. Lawrence K. Peacock.30
Floriculture, Practical. Peter Henderson.	1.50
Florida Fruits, and How to Raise Them. Harcourt.	1.25
Flower Garden, Beautiful. Matthews.40
Fruit Culturist, American. Thomas.	2.50
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Fruit Harvesting, Marketing, etc. F. A. Waugh.	1.00
Fruit, The. P. Barry.	1.50
Fumigation Methods. Willis G. Johnson.	1.50
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Garden Making. Prof. L. H. Bailey.	1.00
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Grape Grower's Guide. Charlton.75
Grape Growing and Wine Making, American. Prof. George Husmann.	1.50
Greenhouse Construction Prof. L. R. Taft.	1.50

Greenhouse Management. Prof. L. R. Taft.	1.50
Horticulture, Annals of. Prof. L. H. Bailey.	1.00
Horticulturist's Rule Book. Prof. L. H. Bailey.75
House Plants and How to Succeed with Them. Lizzie Page Hillhouse.	1.00
Insects Injurious to Fruits. Saunders.	2.00
Irrigation Farming. L. M. Wilcox.	2.00
New Horticulture, The. H. A. Stringfellow.	1.00
Nursery Book. Prof. L. H. Bailey. Cloth.	1.00
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Plants, Your. James Sheehan.40
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Principles of Fruit Growing. Prof. L. H. Bailey.	1.25
Pruning Book, The. Prof. L. H. Bailey.	1.50
Quince Culture. W. W. Meech.	1.00
Rose, The. Its Cultivation, Varieties, etc. H. B. Ellwanger.	1.25
Rose, Parsons on the.	1.00
Small Fruit Culturist. A. S. Fuller.	1.00
Spraying of Plants, The. E. G. Lodeman.	1.00
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Strawberry Culturist. A. S. Fuller. Illustrated.25
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What Theodore Roosevelt Says.

An article on "The Presidency," by Theodore Roosevelt, to be published in the November 6th issue of THE YOUTH'S COMPANION, will be of great public interest. When the article was written Mr. Roosevelt had not even been nominated for the Vice-Presidency.

Nothing was then further from his thought than that he would so soon exercise the great powers which are entrusted to the President of the United States.

In view of the circumstances the article possesses an importance more than ordinary, and it will be eagerly looked for. The number of THE YOUTH'S COMPANION containing it, and all the subsequent issues of 1902, will be sent free to new subscribers from the time their subscription of \$1.75 is received for the 1903 volume. The new subscriber will also receive THE COMPANION Calendar for 1903, lithographed in twelve colors and gold. Full illustrated Announcement of the new volume and sample copies of THE COMPANION will be sent to any address free.

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TWO MAMMOTH BUILDINGS

PALACES OF AGRICULTURE AND HORTICULTURE WILL STAND ON HIGH GROUND AT THE WORLD'S FAIR.

World's Fair, St. Louis, Sept. 1st.—The contract for grading the sites of the Palaces of Agriculture and Horticulture at the World's Fair has been let. The work will require the handling of 252,000 cubic yards of earth, carrying it an average distance of 500 feet. The Agricultural building according to revised plans will be 600 by 1600 feet, covering an area of nearly a million square feet, or more than 22 acres. In this great building will be displayed the extensive exhibits of foods, dairy products, bees and bee products, farm machinery and the Agricultural exhibits of states and nations of the world. The location of the building is near the central part of the Exposition grounds and its immense size, upon the elevated site which has been allotted to it, will make it perhaps the most prominent of the fifteen great exhibit palaces. The Palace of Horticulture will stand directly south of the Palace of Agriculture and will be 400 by 800 feet, having an area of 320,000 square feet or seven

and a half acres. One room in this building 400 feet square will be devoted to fruits and fruit products, another room 200 by 200 to a conservatory with floral display and still another room 200 by 200 feet to the accessories of horticultural, such as implements and appliances for the cultivation and handling of fruits and flowers. The elevation of these palaces is such as to afford opportunity for terraced gardens and other beautiful landscape effects, while the outdoor exhibits of agriculture and horticulture will be very extensive and interesting both to the general visitor and the practical grower or expert. Frederic W. Taylor is the chief of the department of Agriculture and acting chief of Horticulture. The plans for both these great palaces are now being prepared in the department of works under Isaac S. Taylor the director of the department, and it is the expectation that they will far surpass in beauty and arrangement the similar palaces at any former exposition.

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