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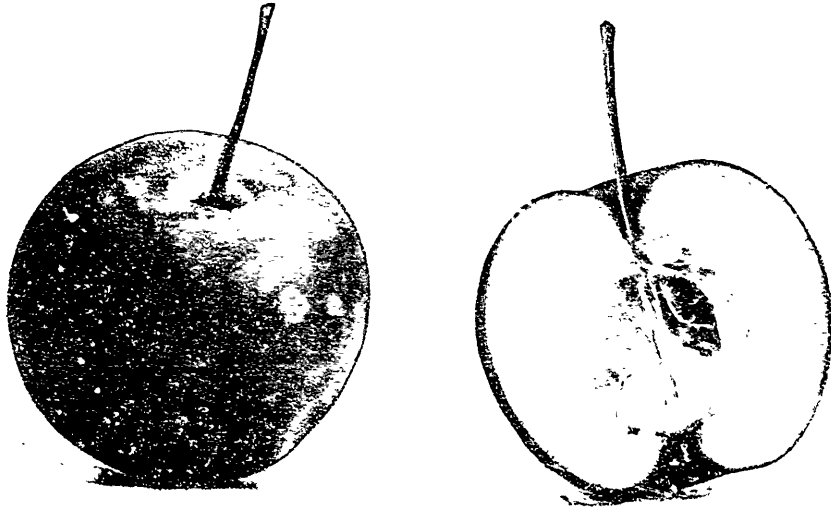


FIG. 2690. TRANSCENDENT.

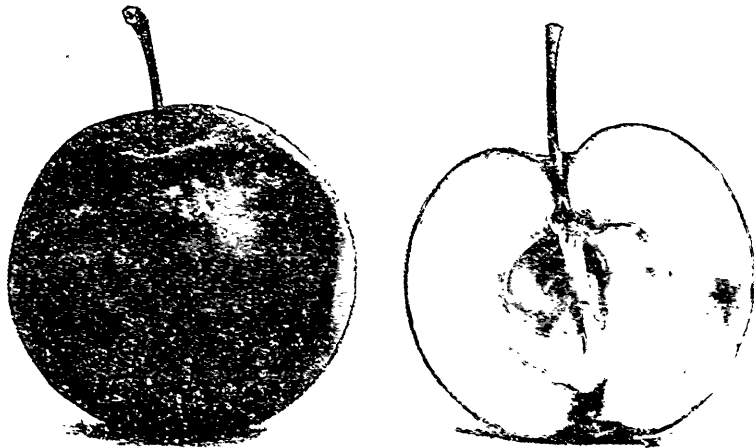


FIG. 2691. HYSLOP.

THE CANADIAN HORTICULTURIST

DECEMBER, 1903

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NUMBER 12

CRAB APPLES

TRANSCENDANT.

An excellent early autumn variety of the hybrid crabs.

ORIGIN: United States.

TREE: of moderate slender growth, hardy, somewhat subject to twig blight.

FRUIT: size $1\frac{1}{2}$ inches long by $1\frac{1}{4}$ broad, which is a medium size for its class; form roundish oblong, flattened at the ends, ribbed; color of skin, golden yellow with crimson cheek and thin whitish bloom; stem one and a quarter inches long set in an open deep cavity; calyx closed, segments large, set in a hollow, slightly corrugated basin.

FLESH: color yellowish; texture crisp and moderately firm; flavor acid, slightly astringent, becoming pleasant when fully ripe.

SEASON: August and September.

HYSLOP.

A well known and widely cultivated variety of hybrid crab. Its dark, rich, red color and its late season make it a valuable variety.

TREE: vigorous, of spreading habit.

FRUIT: size $1\frac{1}{2}$ inches by $1\frac{1}{4}$; form roundish ovate, obscurely angular; color a dark rich red, covered with heavy blue bloom, and having many obscure yellowish dots; stem about one inch and an eighth in length, set in an obtuse, regular cavity.

FLESH: yellowish, acid.

SEASON: September and October.

VALUE: very good for culinary uses and for cider.

ORANGE.

A fairly good dessert variety of hybrid crab.

ORIGIN: United States.

TREE: a slow grower, productive.

FRUIT: size medium, $1\frac{1}{2}$ inches by $1\frac{1}{4}$; form round, slightly flattened at the ends; color light orange, with minute white dots and russet veins; stem, slender, $1\frac{1}{2}$ inch in length, set in a deep open cavity; calyx closed, in a furrowed basin.

FLESH: color yellowish, with yellow veining; texture a little dry; flavor mild, pleasant acid.

SEASON: September.

WHITNEY.

(Whitney's No. 20.)

One of the most popular and widely planted of the hybrid crabs, being large in size and good for dessert or cooking purposes and for cider making.

ORIGIN: Illinois.

TREE: very hardy.

FRUIT: large for its class, measuring 2 inches long by $2\frac{1}{4}$ broad; color waxen yellow ground nearly covered with dark red and crimson, and having a few minute, white dots; stem one inch long in a wide, obtuse, regular cavity; calyx closed in a flat wrinkled basin.

FLESH: color yellow; texture tender and juicy; flavor sub-acid, pleasant.

VALUE: dessert second rate; cooking first rate.

SEASON: August to September.

In the southern fruit districts of Ontario the hybrid crab apples are of little commercial value, and are never planted for profit. Here and there a tree or two may be found in the garden or on the lawn as an ornament, or to supply the house with fruit enough for preserves or jelly, which latter is highly esteemed. Thirty or forty years ago the Transcendent, the Montreal Beauty and the Yellow Siberian were the varieties mostly planted, and of these the Transcendent still holds its place, though largely supplanted by the Hyslop.

But in the far north, where our fine commercial apples cannot be grown, it has been found that hybrids of the Siberian crab with the common apple are of the greatest value. The Siberian crabs proper (*Pyrus baccata*)

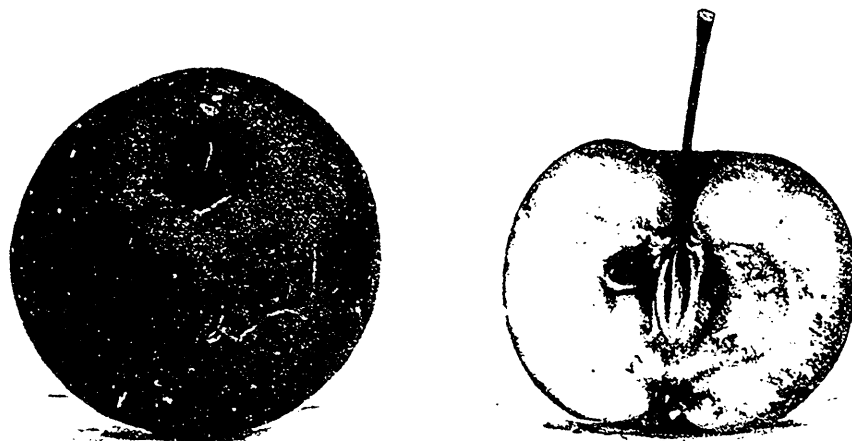


FIG. 2692. ORANGE.

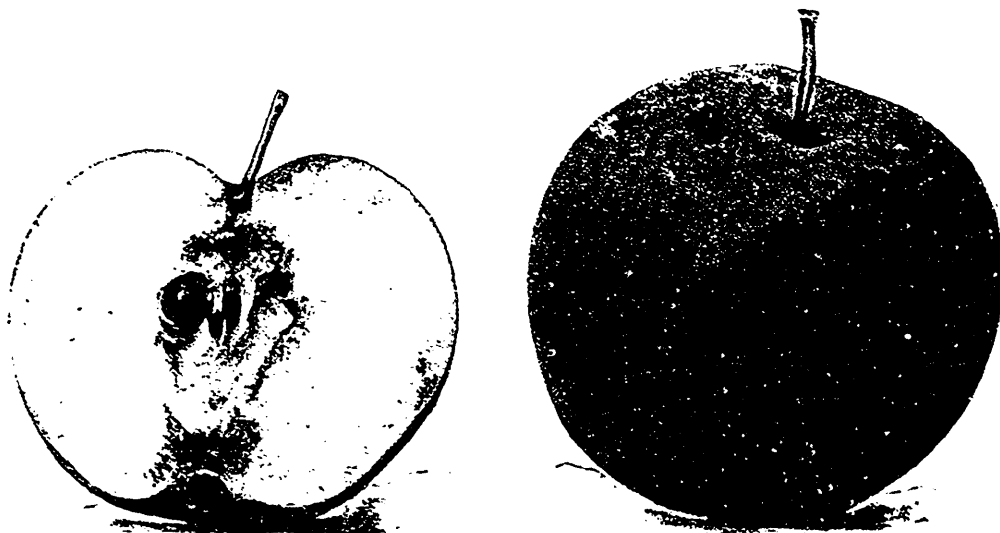


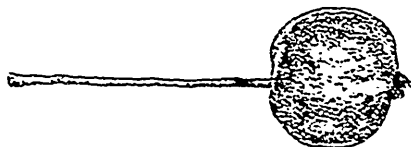
FIG. 2693. WHITNEY.

are distinguished from the apple (*P. malus*) by their long slender fruit stalks, often two or three inches in length, by their firm flesh, which never becomes mellow, and by their deciduous calyx, which falls before the maturity of the fruit. But this distinct type of crab is chiefly useful to us for crossing with more valuable apples, to which their hardiness is thereby imparted in a remarkable degree.

In this month's issue we give our readers photogravures of four varieties of these hybrids, which are already widely cultivated in the colder parts of Canada, viz.: Transcendent, Hyslop, Orange and Whitney, and we shall be pleased to receive notes concerning their value from correspondents living in our northern sections.

Fisher, in Montana Sta. Rept, 1902, has been testing ten of the hardiest varieties of crabs, and reports that the best were Whitney, Transcendent, Hyslop, Orange and Greenwood, the latter of which is not known with us.

Dr. Wm. Saunders, director of the experimental farms of the Dominion, who is a noted hybridist, has been making praiseworthy efforts in this direction, and has already succeeded in producing several new varieties of apples which promise to be of especial value in the Northwest Territories.

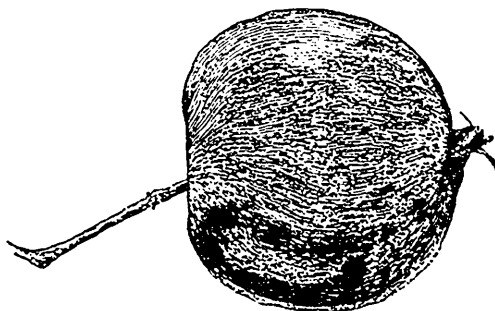


PYRUS BACCATA.

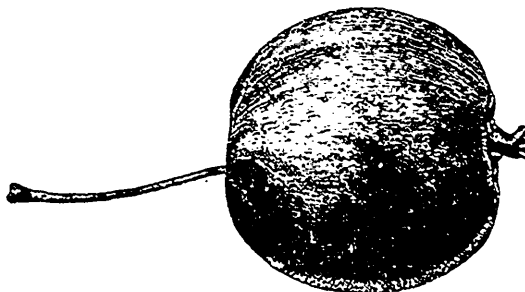
In this work Dr. Saunders used seed of the berried crab, *Pyrus baccata*, imported from St. Petersburg about ten years ago, and raised seedling trees at Brandon and Indian Head, which have proved perfectly hardy and productive, although the fruit was inferior and about as small as a cherry. (See Fig. 2694 after Dr. Saunders.)

In 1894 crosses of these seedlings were

made with Tetofsky, Duchess and Wealthy, and out of a large number of crossbred trees, which varied much in form and size, several have been found worthy of distinction in the Northwest, and all seem to retain the hardiness of the crab parentage. We give illustrations from the Doctor's report of two of his hybrid crabs, in order to give our readers some idea of the progress so far in this work. We also attach his descriptions of the same.



CHARLES.—*Pyrus baccata* female, with Tetofsky male, planted in orchard at one year from seed, April 28th, 1896. The tree has grown rapidly and wintered well. In the spring of 1899 it blossomed freely. The flowers were deep pink in bud, large when open, pinkish white, petals wide. The fruit set well and ripened about September 3rd. Size of fruit 1 9/16 inches across and 1 6/16 inches deep, distinctly ribbed, calyx persistent. Color a uniform yellow and very attractive. Flesh yellow, solid, crisp, juicy, with a pleasant flavor, mildly acid and very slightly astringent. Skin rather thin, fruit bakes well.



PIONEER.—*Pyrus baccata*, female, with Tetofsky, male. Planted in orchard as a yearling tree, April 28th, 1896. It has grown rapidly and it blossomed freely in the spring of 1899. The blossoms were pink in bud, large and pure white when open, petals wide. The fruit set well and was ripe September 21st. Size of fruit 1 1/2 inches across and 1 1/4 inches deep, slightly ribbed, calyx persistent. Color yellow, with a pink cheek. Flesh white, fine grained, firm, crisp, moderately juicy, subacid, with a pleasant flavour, astringency very slight.

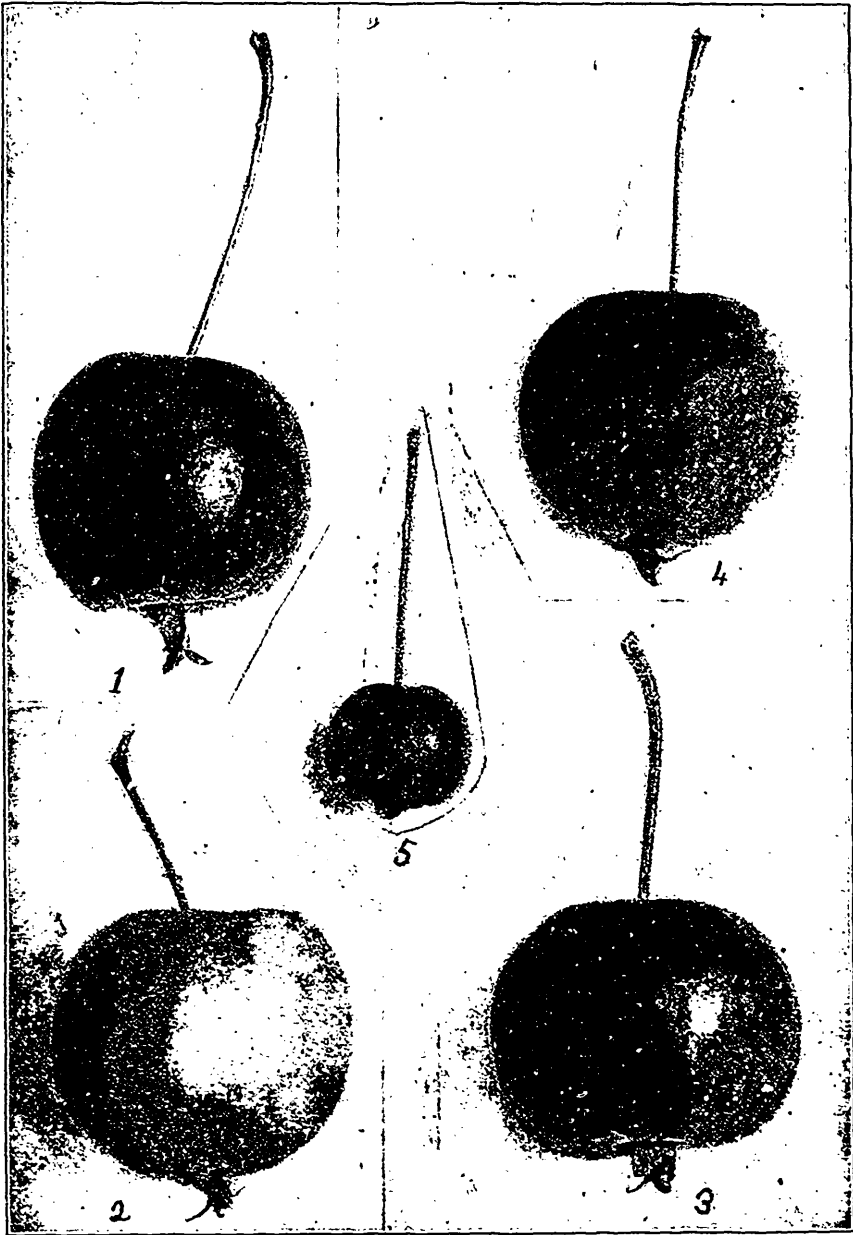


FIG. 2694. SHOWING SOME OF DR. SAUNDERS' HYBRIDS FROM PYRUS BACCATA.

Editorial Notes and Comments

FRUIT put away for winter use should be kept cool or it will soon decay. If in the cellar, the doors and windows should be opened enough to keep the temperature down as near the freezing point as can be with safety.

SCIONS may be cut and packed away in sand or fresh saw dust until needed. There are many apple and pear trees of unprofitable varieties; these should be marked and top grafted in early spring.

TOOLS, ladders, baskets, etc., should all be carefully gathered and stored. These may be repaired or painted as may be desired during the winter season. For this purpose a tool room heated with a stove is a great convenience.

PRUNE grapes, currants and gooseberries and pack away the cuttings in fresh saw dust, or in earth not too dry, for spring setting. One may just as well enlarge his plantation in this way as to pay the nurseryman to grow the young plants.

A WINTER MULCH of strawy manure, or of leaves and evergreen boughs over the earth about the strawberry vines, will prevent the alternate freezing and thawing which is so injurious to the plants.

THE LAWN should receive a top dressing of fine manure and ashes to keep it in a thrifty condition. Parts on which the growth is weakly should be marked for a fresh sowing of seed in the early spring.

IRRIGATION does not seem to be always advantageous. Jordan, of the New Jersey Station (Rept. 1902) got a better yield of asparagus from plots not irrigated than from those irrigated; and the ripening of Lombard plums was delayed six days by irriga-

tion. Of small fruits the yield was considerably increased, raspberries 5 per cent., currants 10 per cent.

THE GARDENER should remember at this season to lay aside in a cellar a good supply of fine rich earth for use in spring in his hot beds and cold frames.

A DOMINION EXHIBITION is proposed for Winnipeg in 1905, and the project is being heartily supported by the public organizations of that city.

NUT GROWING would no doubt be a profitable industry in some parts. J. T. Lovett, of Emile, Pa., has about twenty-two acres of chestnuts, containing about 12,000 trees from 4 to 13 years old. They are set in rows 30 feet apart each way, and the ground cultivated. The thirteen year old trees are in bearing and yield about a bushel of nuts each year. The Paragon is the favorite, because of its productiveness. Chestnuts appear to be in great demand, and the whole crop of this orchard last year sold for \$10 a bushel.

THE HYSLOP CRAB has brought the highest price of any at the South Haven fruit station, Michigan, during the past season.

THE HERBERT AND THE SARAH raspberries are two of the hardiest varieties so far tested at the Central Experimental Farm, Ottawa. The former was originated by our director, Mr. R. B. Whyte, and the latter by Dr. William Saunders, both of Ottawa.

THE SODA MIXTURE for spraying has been used in Europe for three years past, instead of the Bordeaux. It is more easily applied, is cleaner to handle, and adheres better to the foliage than when lime is used.



FIG. 2695. APPLE PACKING IN THE ORCHARD. A PICKER EMPTYING HIS BASKET ON THE PACKING TABLE.

It is a little more expensive than lime, but the advantages are in its favor. Five pounds of the soda are needed to neutralize the four pounds of sulphate of copper. The formula therefore would be:

- 4 pounds copper sulphate.
- 5 pounds washing soda.
- 40 gallons of water.

SPARKS' EARLIANA tomato has been tested for three years by Prof. Macoun, horticulturist at the Central Experimental Farm, Ottawa, and has proved itself the best early variety out of 93 varieties tested; the first fruit having been gathered on the 29th of July. The seed was sown in hot bed on April 3rd, the plants pricked out into strawberry boxes on April 25th, and planted in the open ground on June 2nd, four feet apart each way. The fruit is not only very early, but also of good size and quite smooth. The total yield of five plants was 77 lbs. 6 ounces, or about 15 lbs. per plant.

HARDY APPLES FOR THE NORTH.

WHILE in the most northerly parts of Ontario crossbred Siberian Crabs are the most promising varieties of apples, there is a line south of which

some of our hardier varieties of *Pyrus malus* may be successfully grown, and in view of the rapid settlement of the parts we cannot too soon determine what varieties may be safely recommended for cultivation. Fisher, of Montana, Sta. Rept. 1902, reports on 64 varieties planted in 1895, of which only twenty-six are alive, and of this number only eight are worth growing. These are Wealthy, Yellow Transparent, Duchess, Okabena, Hibernial, Tetofsky, Longfield and Gideon.

THE WEALTHY APPLE.

The Wealthy apple seems to be growing in favor on all sides, and especially along the northern limits of its growth. It is perfect in form, free from spots, does not need spraying, is little affected with codling moth, and is withal beautiful to look upon and pleasant to the taste. Almost the only fault found with it is that it drops early from the trees, and this can be obviated by early harvesting. Mr. W. T. Macoun has an acre of Wealthys at the Central Experimental Farm, Ottawa, and has been exporting them in bushel boxes, tastefully packed. His records show an average profit for four years of \$121.38 from trees set ten feet apart in the orchard each way.

Prof. Macoun exported his Wealthy apples to Glasgow last fall, and was much pleased with the result. On the 1st of October, 1902, he forwarded 59 cases of Wealthy in boxes measuring $10\frac{1}{2} \times 11\frac{1}{2} \times 22$ —the California 50-lb. apple box—and they were sold at 6s. 9d. per case.

SCAB ON THE APPLE AND PEAR.

EVERY season, unless climatic conditions are peculiarly unfavorable to its growth, this fungus becomes more and more troublesome to the fruit grower. Varieties that once were immune are now quite subject to it, and a large part of the crop is unfit for market, both

from its scabby appearance and its consequent small size. Besides this, the trees themselves are weakened in growth and are less productive, so that the fruit grower has in this fungus a most serious obstacle to his success. Eriksson (see *Expert. Sta. Record* Oct. 1903, p. 163) recommends immediate removal and destruction of fallen leaves from affected trees, and spraying or washing the bare trees with Bordeaux mixture or copper sulphate solution, during the winter. In addition he advises two or three sprayings in spring and summer.

FRANCE A MARKET FOR CANADIAN APPLES.

IT has been already pointed out in these pages that France is asking for Canadian apples, and that for our first-class stock a good demand may be found in Paris among the first-class people who appreciate a good thing and are willing to pay for it. That this is not mere conjecture is proven by some recent sales of apples to go to Paris. The writer for example has a contract for 150 boxes of prime apples, to go to that city as a sample lot to open up a trade for coming years. They are all to be fancy colored apples, weighing not less than seven ounces each, to be wrapped in paper, and carefully packed with excelsior. For these the writer is to receive \$1.72 per box delivered in Montreal. This is a high figure, but perhaps not too high for such a high grade article.

"Certainly not," says Mr. John Brennan, of Grimsby, "for I have been doing as well as that in our own country. I pack my fancy XXX Spys that way and sell them only on order. Last spring I made sale of some of my best brand for \$2.50 a box, delivered in Quebec! I often make sale of this brand at from \$1.50 to \$2.00 a box in Canada during the winter."

Now we have no doubt that fancy stock, packed in an attractive manner, will com-

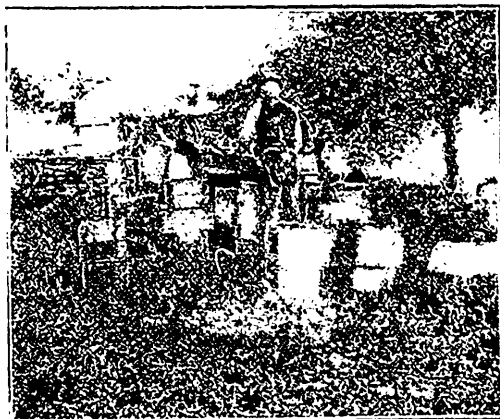


FIG 2696. APPLE PACKING IN THE ORCHARD. THE CHOICE SAMPLES GO IN BOXES, AND ORDINARY STOCK IN BARRELS.

mand good value in almost any city in the world, even in the heart of an apple raising country.

HOW TO PACK.

A subscriber, Mr. C. McIlthargey, of Stratford, writes:

SIR,—I was told that you had experience in packing apples in boxes, and as we cannot get barrels we have had some boxes made same as used for oranges, but find difficulty in getting them packed tight. Do you advise wrapping in paper or using some kind of packing, such as excelsior, for the top. Any information you give will be greatly appreciated.

The orange box is entirely too large for such heavy stock as apples; besides, the sides are made of material that is too thin, and outside pressure would bruise such unyielding fruit as apples. For apples either a forty pound box, measuring inside 9 x 12 x 18, or a bushel box measuring inside 10 x 11 x 20 is much more suitable. The former is the California pear box and the latter is the Tasmania apple box. These are made of $\frac{1}{4}$ or $\frac{3}{8}$ inch sides, and $\frac{5}{8}$ ends, and will be found to pack well.

We wrap all extra XXX fruit in tissue paper and pack against the top, in rows, four apples wide, three or four deep, and from 6 to 8 long, according to the size of the box and the size of the apples.

For padding we use excelsior, and the

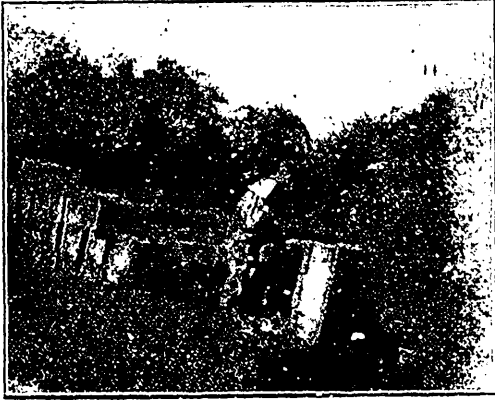


FIG. 2697. APPLE PACKING IN THE ORCHARD.
NAILING UP THE BOXES, USING EXCELSIOR
OR WOOD SHAVINGS AS PACKING
MATERIAL.

same under the cover to prevent the bottom lid from bruising the fruit when it is being nailed on. This stock is selected in the orchard and brought into the fruit house for wrapping and packing.

Ordinary XXX, or No. 1 apples, we pack in boxes from the packing table in the orchard, and the No. 2 in barrels, throwing the culls into heaps on the ground to be afterward gathered up for cider. No doubt it would be better to evaporate all No. 2 apples, instead of shipping them, and if this work could be done at home, on a small sized evaporator, probably this kind of stock could be made to bring the grower almost as much money as his No. 1.

CIDER APPLES FOR FRANCE.

THERE seems to be a most unusual shortage of apples in Europe, when even our Ontario culls are being bought up and forwarded to France for cider making. The Oakville Star of the 7th November has the following interesting item:

For over a week the Dawson Commission Co. have been buying up solid cull apples around the country and packing them in boxes weighing three hundred pounds each and holding as much as two barrels. The biggest rush was on Tuesday, when over a dozen teams, with large loads of apples, waited their turn on the hill to the wharf. Many of these apples were

not marketable at all, being too small, but as long as they were sound they were all right for this purpose.

The steam barge, Lloyd S. Porter, came in on Tuesday, and the pier was pretty well filled up waiting for her. She called at Burlington and took over twelve hundred boxes from there. It was after eleven o'clock at night when she finished loading. All day the company had a big gang busy.

The shipment from here was about fifteen hundred boxes, or about three thousand barrels, which is the biggest shipment ever put out of Oakville. A number of carloads were also shipped from Bronte. The entire shipment from Canada to France will be one hundred thousand boxes. The taking away of these apples has left about twelve hundred dollars with our farmers for stock which otherwise would have largely gone to waste.

We purchased these apples at a low price, said the Dawson Co. to the writer, only about eight cents a bushel, but we took everything in, no matter how small or scrubby. The French buyer does not wish to take more at present, but we are just now negotiating with an English buyer for a shipment of the same class.

"I do not see," said Mr. Chapin, of Madalin, N. Y., "why your Ontario farmers do not forward their own fruit just, as our growers do. I am forwarding agent for fruit growers along the Hudson river, and there every farmer ships his own stock, even if he has only fifty barrels."

DOES IT PAY TO SPRAY.

THE excellent results of faithful spraying with the Bordeaux for the prevention of apple scab is wonderfully evident in the Johnson orchard, near Simcoe, in Norfolk county, as will be seen by reading the article on page 355, by T. H. Race, of Mitchell, who was judge of fruit at the Simcoe Model Fair, and who visited the orchard the day previous to our visit.

There must surely be some conditions not fully understood when such remarkable results attend spraying in some instances, while in others, with the work apparently as well performed, the benefits seem to be comparatively small. It is only in the latter instance that there is any question as to whether it pays or not.

FACTORIES PAY GOOD PRICES.

"Now," said Mr. Fick, of Simcoe, "in selling to the factories a few spots are not objectionable, for they are removed with the skin. So, in raising apples for the factory, spraying is not a necessity, and all that expense is saved."

"But if you had clean fruit would it not bring you far more money if you were to export it?" we asked.

"Well, it is a question. The factory pays me 50 cents a hundred pounds, or about 25 cents a bushel, and takes every apple, so you see I have no culls to throw out. Then, if I were packing for export I would have to pick my apples by hand, and that would mean a great expense this year with the present high price of labor; indeed, I do not believe I could possibly get men enough to hand pick all the apples in this big orchard. For the factory I can shake them down and so handle my crop quickly, and with very little expense. Besides this, I have no barrels to buy, and this year, at 50 cents a barrel, they make a large item in the cost of handling the crop. Now the whole cost of handling my apples for the factory is not more than two cents a bushel, for we simply shake them down and carry them in the boxes furnished us. The packing, too, is no small item in putting up an apple crop for export, and I am saved that expense also."

"What varieties have you?"

"I have ten acres of Spy, ten of Greening and twenty of Baldwin."

"What quantity do you expect to harvest?"

"About 20,000 bushels, which will bring me from the factory about \$5,000, with comparatively little expense harvesting them."

"Do you consider this light sand about Simcoe well adapted for apple raising?"

"No, it is not the best soil but by proper fertilizing we can grow fine fruit. When the trees were young I gave them plenty of

stable manure, and now I do not apply stable manure but every year I sow a bushel of wood ashes about each tree. This, I think, helps to give color to the fruit, as well as vigor to the tree growth. Then for nitrates I grow clover. Every spring, say about the first of May, I plow under the clover, putting a chain on my plow so as to cover it well. Then I cultivate the orchard for about two months and about the first of August I sow clover again. Each succeeding year the clover seems to catch better, so that this year I had a wonderful crop, as you can see."

A COMPARISON WOULD BE INTERESTING.

Now, while there is no question that Mr. Johnson's course of so spraying and pruning his trees that they have yielded a crop of beautiful, clean fruit, worth the highest price in the market, is the ideal one for us all to aim at, still it would be interesting to have a comparative report tree per tree, showing the relative profits of the two methods. The one man has been to a very great expense throughout, from spraying to harvesting, while the other has done everything in the cheapest manner.

Perhaps the best commentary on it all is the determination on the part of Mr. Fick that next year, providing he can get the use of a power sprayer, he will have his orchard thoroughly treated. After reading the favorable reports upon the excellent results obtained in lessening scab with the use of the lime and sulphur mixture, his present intention is to give his orchard a thorough whitening with it in early spring.

We are all agreed in the great possibilities which may result from proper spraying, but with a large orchard the undertaking by hand is so enormous that many fruit growers would prefer to take their chances rather than undertake it, especially with the present high price of labor.

POWER SPRAYING WANTED.

There is no doubt that one half the spraying is so badly done that only failure could possibly result. The work is so dirty, so laborious and disagreeable, that the material is not properly prepared, nor is one-tenth of the leaf or fruit surface covered. Few orchardists seem to remember that only the parts covered with the mixture are safe from the tiny fungous spores which float about in the atmosphere. The time will soon come, we hope, when we shall have the professional sprayer, who will thoroughly understand his work, and who will take contracts for the season to do the spraying with a power outfit just as it ought to be done.

"It would cost me," said Mr. Fick, of Simcoe, "at least \$500 to spray my big orchard by hand in the way my neighbor Mr. Johnson has done his. I have fourteen hundred trees about twenty years planted, and to spray them as they should be sprayed, would be no small undertaking."

"With a power sprayer," said Mr. Alex. McNeill, the chief fruit inspector from Ottawa, who was with us, "it would not cost you nearly as much as that. With our gasoline engine, which we used in the orchards between Ingersoll and Woodstock, we found that one could take a contract for spraying an orchard of bearing trees at about three cents per tree, and that with such a power sprayer the work could be thoroughly done for about ten cents per tree for the whole season. At this rate," said he "this orchard of Mr. Fick's, containing 1,400 bearing trees, could be sprayed for the whole season for an outlay of say \$140."

AN IMPROVED BORDEAUX.

IN Great Britain and Europe during the past three years a mixture has been made with washing soda to neutralize the sulphate of copper instead of lime. It is claimed that this mixture adheres better

than the ordinary Bordeaux mixture. Tests were made at the Central Experimental Farm this year to learn how much soda was necessary to neutralize 4 lbs. of bluestone, and it was found that 5 lbs. were needed. The formula for the preparation of the soda mixture would thus be:

- 4 lbs. copper sulphate.
- 5 lbs. washing soda.
- 40 gallons water.

An experiment was tried to determine the value of this mixture as compared with the ordinary Bordeaux, but as none of the fruit was spotted no conclusions could be drawn. The soda mixture is well worthy of a trial, for although a little more expensive, it is more easy of application than that made with lime, and often good lime is had to get in the country.

IMPROVING OLD ORCHARDS.

WHILE spraying is the best means of insuring apple and pear orchards against fungus and insect enemies, it is only one of the conditions of success. Top grafting to proper kinds, pruning and manuring are too much neglected in Ontario orchards.

"Is my orchard too old to graft over to better and more profitable kinds?" asked a neighbor. The trees were not over forty years of age, and were good for another sixty years, so we replied that it would pay well, for the new scions would come into bearing within two or three years, and in a few years the trees would be entirely changed over.

"I can see the results of last year's thinning of the young wood on my Spy trees," said another. "I followed the advice given in the Canadian Horticulturist about pruning, and instead of beginning at the trunk and cutting off the large limbs I took a high step ladder and began at the outside of the trees and thinned out the young bearing wood only. I continued this method in to-

ward the interior of the tree. It was a slower job than simply cutting off a few big limbs but it has paid me well, as a comparison with trees not so pruned plainly shows. The apples on the trees on which the wood was carefully thinned out were very large and fine; but on those not so treated they were small and uncolored."

"And I," said another neighbor, "have had extraordinary results from a very simple method of fertilizing. Some years ago I read in the report of the Ontario Fruit Experimental Stations a recommendation of a treatment for enriching orchard soil; it was the yearly plowing under of a cover crop of red clover, together with the annual application per acre of 50 lbs. of superphosphate and 50 lbs. of wood ashes. This was a very economical treatment, and I resolved to try it on the poorest bit of orchard on my farm. The soil was very poor, and for years the fruit produced had been almost worthless. The orchard was chiefly Spy apples and Bartlett pears. I have persisted in this treatment every year for about six years, and now this plot is acknowledged to be the best on my farm. Both the Spys and the Bartletts have given me splendid annual crops, the fruit has been large and fine, and more highly colored than in any other part

of my orchard. I attribute the heightened color to the potash."

EVAPORATING SURPLUS APPLES.

IN some cases we have no doubt that it would pay the fruit farmer to evaporate his own second grade apples rather than sell them to a company who will only pay him from forty to fifty cents a hundred pounds. The only question is that of hands to do the work. A profitable machine, capable of turning out from 300 to 400 lbs. a day, can be purchased for about \$100, and would prove a profitable investment, especially in cases where the family will turn in and help on the work. Evaporated apples sell at about six cents a pound; and since a hundred pounds of fresh apples would give about fourteen pounds of dried product, worth about 85 cents, or a little more than 40 cents a bushel for the green apples, it is evident that the investment would be a good one.

McArthy, of the North Carolina Experiment Station, does not favor the common method of bleaching apples by fumes of burning sulphur, but advises instead that they be dropped into a tub of weak salt brine, made in the proportion of one pound of clean table salt to sixteen gallons of water, and boiled together for ten minutes.

EDUCATION AND SUCCESS

AN uneducated child has one chance in 150,000 of attaining distinction as a factor in the progress of the age.

A common school education increases his chance nearly four times.

A high school education increases the chance of the common school child twenty-

three times, giving him eighty-seven times the chance of the uneducated.

A college education increases the chance of the high school boy nine times, giving him 219 times the chance of the common school boy and more than 800 times the chance of the untrained.—*The World's Work.*

OFFICERS OF NORFOLK FAIR



FIG. 2698 Mr. J. THOMAS MURPHY.

THE photographs of the secretary and superintendent, which were forwarded at our special request, came just too late for our November issue, so we have pleasure in using them this month with some personal remarks added, which we are sure will be interesting to fair managers in other parts.

MR. H. H. GROFF, PRESIDENT.

Mr. Groff holds the following public offices: President Norfolk Union Agricultural Society, president Simcoe Horticultural Society, president Norfolk Poultry Association, vice-president Norfolk North Riding Agricultural Society, vice-president for Canada, Society of American Florists;

he is also manager of the Molsons Bank, Simcoe, but it is in his work in crossbreeding the gladiolus that has more than anything else made him famous. Of his work in connection with the Fair, Mr. Murphy writes: "The consensus of opinion is that we have the right man in the right place. As the head of the Association, his executive ability is of the first order. He is always courteous and obliging to one and all, and in the allaying of all matters causing the least annoyance or friction in reference to any of the exhibitors or the public, his wise counsel and decisions give the most perfect satisfaction."

MR. J. THOS. MURPHY, SECRETARY.

J. Thos. Murphy, who has lived in Simcoe almost all his life, has occupied the position of secretary for this association 30 years. When first elected, the Fair occupied ten acres, on which was erected a medium sized hall and a small poultry house. The membership was limited, and the entries numbered some 1,600 or 1,800. To-day about 20 acres are occupied for Fair purposes, and the following are among some of the buildings erected thereon: A woman's building for ladies' work and arts, a carriage building, a grain, fruit and vegetable hall, a poultry house, four horse stables, five cattle sheds, 300 feet of pig pens covered with galvanized iron, four large sheep pens also covered with galvanized iron, a grand stand and secretary's office, and directors' room, with fine horse ring in front of grand stand, surrounded by a good picket fence, the buildings being all well painted and in good preservation.

The grounds are also much improved in appearance by the extensive planting of maple trees, around the outside of ground, also encircling the horse ring, and several beauti

ful groves in various places in the grounds, thus making the grounds and buildings second to none in the Province.

The membership at present is between 400 and 500, and the entries average between 4,500 and 5,000.

Mr. Murphy occupies the position of president of the Canadian Association of Fairs and Exhibitions for the third term, is secretary-treasurer of the Simcoe Horticultural Society, and also secretary-treasurer of the Norfolk Poultry Association. He held, until its removal from Simcoe, for a number of years, the position of U. S. Vice-Commercial Agent at this point.

Mr. H. H. Groff says of him: "It is a well known fact that in organized effort of this kind success is impossible without an efficient secretary, and the great and continued success of this Fair is the best evidence of the efficiency and well known ability of Mr. Murphy, who, since its inception, has devoted his time and energy to a work that has become a monument to the honor of his name wherever the Fair is known. In spite of this great success and its merited recognition by the Provincial Association in the election of Mr. Murphy as its president, like all men of high mental qualities, he is a man of retiring disposition and modesty to the verge of self effacement, and these facts add to the satisfaction of his many friends, who recognize the force and ability of the man in the character and quality of his work."

W. F. KYDD, SUPERINTENDENT.

W. F. Kydd was born in the parish of Barry, County of Forfar, Scotland, the son of a farmer, who was a tenant on one of the finest farms on the Panmore estate. He left Scotland for America in 1878, and farmed for ten years in Kansas and Nebraska, leaving the latter state for Canada on account of his children's education. He settled in Simcoe thirteen years ago, pur-



FIG. 2669. W. F. KYDD.

chasing a small farm inside the corporation of said town. This farm he greatly improved, and turned many an acre of stumps into strawberry beds and fruit trees. He has been greatly interested in agriculture and horticulture, and has for twelve years been a very prominent member of the Fair Board. For the last three years he has occupied the position of general superintendent, which he has now managed with marked ability and success, and in connection with all the work which he has undertaken, has done much to place the Fair where it is at present as one of the most prominent in the Province. As a further evidence of his ability, Mr. Kydd has been selected by the Department of Agriculture to judge horses at various fairs, and also as a speaker at Farmers' Institute meetings.

FRUIT EXHIBIT AT SIMCOE

THE town of Simcoe," says Mr. T. H. Race, of Mitchell, "has the best fall organization that I know of outside the larger cities. And they believe that they have the best fall fair there, even including some of the cities. Having visited their Fair this fall, held on the 14th, 15th and 16th of October, I am not disposed to question their belief. In many senses the Norfolk County Union is a model Fair. It is, to begin with, purely educative in all its features. And it is conducted with a system and enthusiasm that might well be copied by every other fall fair management in the province. There is not a fakir allowed within the gates, nor a circus feature of any kind permitted to show upon the ground. And yet the crowds go in greater numbers to see the Norfolk County Union, purely for its agricultural sights and lessons, than any other show of its kind outside Toronto and London that we have visited this season. The third day's gate receipts this fall amounted to over \$1,700.

But I started out to speak of the fruit exhibit. The superintendent of this department was Mr. Albert Gilbert, and, by the way, every department has its superintendent, whose duty it is to see after that department and answer for its success or failure to a general superintendent, and through him to the chief management. The fruit was not well displayed owing to the loss of the horticultural building by fire last spring. But the fruit itself was a credit to the district and to the general high character of the exhibition. It had the advantage, of course, of the lateness of the season and was well colored. In Kings, Baldwins and Spys, although the exhibit was large and fine in each class, the quality was scarcely up to that in the same varieties grown in Ox-

ford, Perth and Huron counties. In Newton pippins and Talman sweets I had seen nothing any place to compare with the Simcoe exhibit. This statement applies to quality, size and beautiful coloring, which of course includes quality. Two other old varieties, the Spitzenburg and Yellow Bellflower, were by long odds the finest I had seen this fall. The Spitzenburgs were simply beautiful. Ben Davis, Ribston pippins and Alexanders did not compare with those same varieties grown further north, but Greenings, Fall pippins, Seek-no-further and Russets were extra fine. Taken altogether, the Simcoe apple exhibit was extra choice and selected with care and judgment.

In making up the collections I might point out that not enough attention was given to covering the season. Every collection, if not otherwise specified, is supposed to be for family use. Some of the collections shown at Simcoe, though made up of good varieties, did not start till late in the fall. Some had an early fall variety and then had nothing till winter. This feature will be corrected by Superintendent Gilbert in future.

The display of pears was very creditable, though it might be improved upon in so favorable a district as Norfolk county. The plum season was past, but the samples of peaches shown was convincing evidence that the district about Simcoe is especially adapted to peach growing. There were some very handsome specimens of late peaches shown by Mr. W. F. Kydd, the general superintendent, who has recently located at the west of the town, and has already a very handsome peach orchard and vineyard planted out and in full bearing. Mr. Kydd intends to demonstrate the possibilities of Simcoe as a peach district, and is already making an excellent showing."

GROWING RHUBARB IN THE CELLAR

BY

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

O. A. C., GUELPH.

MOST farmers who have a garden at all usually have a good supply of the old fashioned pie plant or rhubarb. This vigorous growing plant provides a wholesome substitute for fruit early in the spring before strawberries come in. It is not generally known, however, that it can be made to produce its crop in an ordinary cellar during the winter, when it would be probably more appreciated than when grown in the usual way in the garden in the spring. The accompanying illustration shows the growth in March of a couple of roots in an ordinary vegetable cellar, after half the crop had been pulled.



FIG. 2700. RHUBARB GROWN IN A CELLAR.

The rhubarb plant makes its most vigorous growth under natural conditions early in the spring, when its large leaves store up in the thick fleshy roots a large amount of nutriment for the production of seed during the summer and growth early next season.

To get the best roots for forcing it is well to allow the plants to make their full growth with little or no cropping of the leaves the previous season, and above all not to allow them to exhaust themselves by throwing up seed stalks. The more liberally the plants are manured and the better they are cultivated the stronger the roots become and the better the crop they will give when forced in the cellar.

In preparing the roots for the cellar they should be dug up late in the fall just before the ground freezes hard. They should then be left where they will be exposed to severe freezing for three or four weeks. If placed under cover in an open shed, or where they will not be buried in snow, it will be all the easier to get at them when it is time to take them to the cellar. About Christmas time they may be put in the cellar and should be banked with earth to keep the roots moist. Care should be taken that the plants are set right side up, as at that time it is sometimes difficult to tell which side of the ball of earth the crowns are on. In the course of a few days the roots will thaw out, and usually enough moisture is thus given off to keep them fresh for some time. They should be watched, however, as they may need water once or twice during the winter to keep the soil moist. The warmer the cellar, the more quickly growth will start, and for the best results a rather low temperature, about the same as that in which potatoes are kept, is best. In a partially lighted cellar the leaf blades will expand very little, and all the strength of the root will go to the development of the stalks. If the cellar is light it is well to darken the part where the plants are kept. If the roots are strong and vigor-

ous, often stalks one and a half to two feet in length and two inches in diameter will be produced with little or no expansion of the leaf blade at the top. When grown thus in the dark none of the chlorophyl or green coloring matter of the leaf develops, and the stalks are bleached to a pinky white. When cooked and made into sauce or pies they turn a beautiful pink color, and are much finer in appearance and flavor than stalks which are

grown in the ordinary way in the garden. Cropping may begin as soon as the stalks are well developed, and may be continued for several weeks until the roots have exhausted themselves, after which they should be thrown out, as they are of little use for growing again.

We would suggest that our readers try growing two or three roots this winter, and let us know the results next spring.

JOHN EVELYN

PATRON OF HORTICULTURE, PHILOSOPHER, PATRIOT.

GARDENING and nature study seem always to have been the delight of the most refined minds, and among these we find John Evelyn, of Wootton, Surrey, England. Born in 1620, he lived in a remarkable age, the times between Queen Elizabeth and Queen Anne. He was a "student of trees and plants and living things, cherishing beside these the history of the ancients, and a critical appreciation of music and its masters." As is evident from his famous diary, he was a scholar, a worker and a gentleman.

Shortly before Evelyn's day, says the *Journal of Horticulture*, there had existed a great taste for gardening among the gentry, and it was the practice to strew the floors with sweet smelling herbs and to have fragrant flowers in the bedchambers. New flowers and fruit trees were imported from the Continent; gardens were carefully laid out "with quaint conceits of mazes and strangely cut Yew hedges." Deer parks abounded, and hunting and hawking were the favorite amusements of country life. Gerarde, we know, had despatched plant collectors to the Levant in 1590, and others followed his example. But the period of the



FIG. 2701. JOHN EVELYN, (1620-1706).

Civil War greatly destroyed the propensities of the Elizabethan reign, nor were they revived till the Restoration of King Charles II. to his throne. John Evelyn, the boy, was sent to his grandfather's home at Lewes

at the age of five, when he started his schooling. At seventeen he went to the University of Oxford, and from there he entered the Middle Temple, and for a time devoted himself to law. The riots in London, incidental to the period, drove the young man to Holland, though that country was also in arms, and he even served as a volunteer, but in a month or two was again back at the Middle Temple. In order to escape being pressed to take the Solemn League and Covenant, however, he was obliged to make a four years' tour, from 1643, through France, Italy and Switzerland. During his residence in Paris he became acquainted with Sir Richard Browne, at that time British Ambassador at the court of France, and in the summer of 1647 Evelyn married Sir Richard's daughter; settling some time afterwards at Sayes Court, in Kent, which he rendered famous. It was at Sayes (for a time occupied by Peter the Great of Russia after Evelyn left it) that he made those experiments and observations which he gave to the world in his *Gardeners' Almanac and French Gardener*, his ever-famous "*Sylva: a Discourse on Forest Trees*," a monumental work, indeed, and a grand record by itself to his wisdom and perspicacity. But with these he published also a work entitled "*Pomona*," dealing with the orchard, nor did he forget a pamphlet on "*Salads*." His "*Terra; a Philosophical Discourse on Earth and Vegetation*," published in 1668, is read with the very greatest interest at the present day. His "*Fumifugium*," of 1661, dealing with the smoke nuisance of London, again asserts the far-seeing mind, pregnant with reforms. But while Evelyn was so much a gardener and natural philosopher, "his foible was omniscience," and at the king's request he produced a work on "*The Origin and Progress of Navigation and Commerce*." The statements contained in the work being

such as greatly incensed the Dutch, with whom England was then much at war. Besides the forenamed books and pamphlets, Mr. Evelyn published others, respectively entitled "*Sculptura*" (1662), a treatise on the art of engraving; "*Numismata, a Discourse on Medals*" (1668); and his "*Parallel of the Ancient Architecture with the Modern*" (1664), as well as others on subjects of lesser importance, including translations. His diary shows him to have been a regular attendant at the court of both King Charles and James II., and though he was so studious and inclined to seclusion, yet he constantly mixed up with the society and fashion and intellect of the period, all of which then concentrated in London. His diary is not so complete as that of Pepys, who was his close companion, but it is the product of a finer mind, and certain passages, like his description of the great fire of London, could not be improved on, as examples of descriptive English. After the destruction of so much of London by the fire, he lent his counsel and assisted Sir Christopher Wren and those who attended to the remodelling and rebuilding of the city. The social history of Evelyn's time shows that between London and the country the distinction was sharply marked. The country gentlemen seldom came to London, but busied themselves in cultivating their estates and in administering justice in their neighborhood. The provincial towns were the social centres for the district. They were a rude, uneducated race, "who drank hard and swore freely," but in their rough way they did their duty, and were revolted by the sight of the vices of the court and capital. The country clergy were hardly more lettered than their squires: the learned and eloquent clergy nearly all came to London. John Evelyn died one year before the accession of Queen Anne, at the age of 86 years.

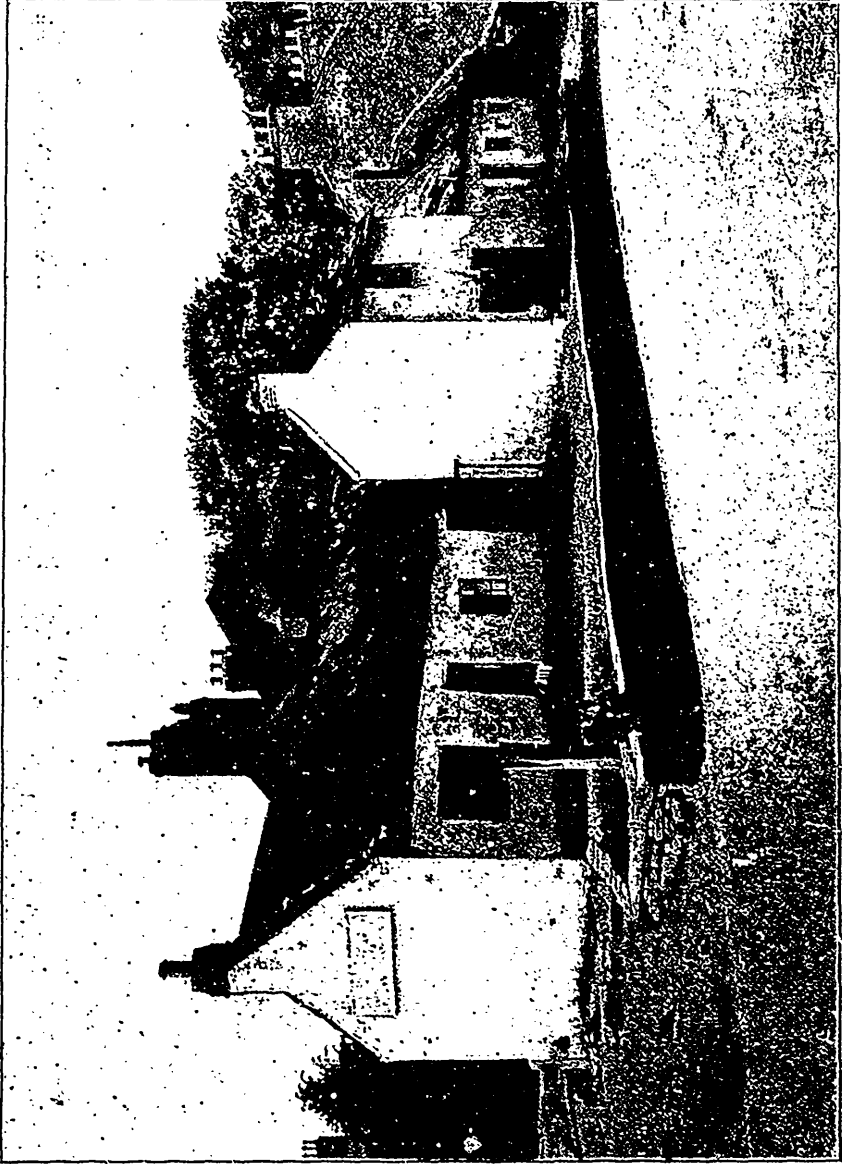


FIG. 2702. CHARACTERISTIC ENGLISH VILLAGE HOUSES.

AN ENGLISH FRUIT FARM

BY THE EDITOR.

HAVING an introduction from Mr. A. E. Kimmins, of Winona, to his uncle, Mr. A. J. Thomas, of Bargainhill, near Sittingbourne, in East Kent, we went down by a Thames steamer to Gravesend, and from Sittingbourne by carriage, four miles, to his lovely country home. The surroundings are picturesque, the land being somewhat hilly and well clothed with orchards and hop yards. On every side, as we approached, were large plantations of cherry, plum, dwarf apple and pear trees, reminding one of the fruit districts of Ontario, except that with us such plantations are young, while in England they are comparatively very old.

"I have an orchard of black cherry trees," said Mr. Thomas, "which must be nearly two hundred years old, for they were old trees in my grandfather's time."

To us it seems doubtful if any Canadian cherry orchard will ever endure to such an age. We have many cherry trees that have reached the age of fifty years, but they are already beginning to fail.

The lawn and hedges about Mr. Thomas' house were all in perfect trim, and such beds of immense pansies as we have never seen in Ontario were placed about in bold relief. What a delightful retreat from the great city of London! "I would not live amid the smoke and dust of that city for anything you could give me, so long as I have this country home," said Miss Thomas, and we heartily re-echoed the sentiment, applied even to our own country home in Ontario.

"What variety of cherries do you cultivate?" we enquired.

"Chiefly the Bigarreaus," said Mr. Thomas, "and of these the chief are the

Amber, the Napoleon and the Yellow Spanish."

"Do you not cultivate the Kentish varieties of sour cherries?"

"Not of late years," said he. "We find more money in growing such kinds as Governor Wood, the Bigarreaus, and the Black Ox Hearts."

Walking through his great cherry orchards we were struck with the enormous size of the trees, and could easily credit them with yielding an enormous crop in favorable seasons.

"Do you cultivate your cherry orchard?"

"No," said he, "not after the trees reach bearing age. Then we seed down the ground to a sheep pasture.

"What are your prospects for a fruit crop this season?" we asked, seeing that the trees in most cases appeared to show very little fruit.

"The blackest we ever knew," said he. "The severe spring frosts, and the backward weather which has prevailed since, have combined to destroy nearly our whole fruit crop this season, so that, unless prices rule very high, it will not even pay for the harvesting. Nearly all fruits are destroyed alike by the frost, pears, plums and apples, as well as cherries. In consequence this ought to be a most favorable season for you Canadians to ship your fruit in to this country."

"How many acres of orchard have you?"

"About one hundred and fifty; mostly devoted to cherries, pears and apples. The apples are grown for the most part on the English paradise stock, and are planted 9 x 12 feet apart."

The top grafting done by Mr. Thomas is

mostly crown work, such as we have often described in this journal, and he showed us samples of this work, which were a perfect success.

In pears Mr. Thomas has tried many varieties, but has found the Pitmaston Duchess, grown as a dwarf, the best commercial variety for profit, and he has a large orchard of it. The Bartlett (Williams) he does not grow to any extent; he prefers Dr. Jules Guyot for market purposes, because it is

larger and more attractive, although it scarcely equals it in quality.

After enjoying a cup of tea with our host we came away regretting that we had not more time to study the details of his methods, and concluding that the life of an English country fruit grower in the south of England was, after all, not very much different from that of the Canadian fruit grower, and that the chances of success was rather in favor of the latter.

THE APPLE MARKETS

LIVERPOOL.—Messrs. Woodall & Co. write: Receipts show a smart advance, being 80,395 barrels; but, far from proving excessive, it would almost appear that the quantity was scarcely sufficient to supply requirements. In the early part arrivals from New York were cloudy and unattractive, but later showed some improvement. Maines were generally satisfactory, though many of them were wanting in size. Canadians were excellent in quality, and have taken by far the first position on the market. It is regrettable that so many varieties, in such small quantities, are being shipped, as they seldom bring their proper value, and the expense of samples so much reduces the net results. It is a matter for shippers to find if some arrangement can be arrived at by which these small parcels can be grouped together, and so avoid unnecessary labor and expense. At the opening there was rather a quiet tone, consequent on the generally unattractive appearance of what was offered, and there was a decline of 1s. per barrel, but this was fully recovered later, and the sound condition and good quality of all arrivals resulted in an active market, which closed at yesterday's sales at last week's full prices, to an occasional advance on choice parcels.

OTTAWA.

“THE McIntosh Red is the best family apple on the market.” So said G. W. Hunt, of the Ottawa Fruit Exchange.

“This is a first-class table apple, its season running from 1st October to 1st May,” he added. “The apples are popular not only in Canada, but on the other side as well. Chicago will take all of this variety we can supply at \$2 to \$2.50 f.o.b. I shipped a car to Winnipeg the other day at \$2.75 f.o.b., and immediately on arrival of this I got a wire back asking for 500 more.

“The quality of all apples coming in this year,” continued Mr. Hunt, “is exceptionally good. There is no scab even on the McIntosh. This variety comes mostly from the St. Lawrence, about Iroquois. From the St. Lawrence district we also get Snows, Ben Davis, Russets, and a few Kings.”

Mr. Hunt says over half the apples received in Ottawa this year have been shipped in boxes. Even a lot of No. 2 apples are received in this form. “The box we prefer,” says Mr. Hunt, “is one 10 x 11 at the end, and 22 inches long.” Mr. Hunt reports having received 85,000 barrels this season to date, as against 40,000 for the same period last year.

APPLE BARRELS SCARCE.

THERE is a great scarcity of apple barrels in all parts of the province, and as a result thousands of barrels of apples will not be shipped or take off the hands of the growers. The coopers cannot get material to make the barrels, and are unable to supply more than half the orders they have received, and what is still worse, for the buyers at least, is the fact that the prices of barrels has advanced from 60 to 70 per cent. during the year. Mr. Sherrington, salesman for the Walkerton Fruit Growers' Association, is one of the many shippers who have difficulty in filling orders owing to the lack of barrels. In the county of York thousands of barrels are stored in outbuildings awaiting shipment. As to the abundance of the crop, one orchard which in the early part of the season gave promise of

yielding 75 barrels, will yield fully 200 barrels of fruit suitable for the export trade. This is in addition to 40 or 50 barrels fallen and immature fruit suitable for cider making and immediate consumption. Four trees of the Ben Davis variety yielded 36 barrels, or an average of nine barrels per tree, a remarkable showing, and one which it is doubtful has ever been surpassed. G. W. Gillbank, of Hagerman, representing a leading commission house, has purchased some 400 barrels of apples in York county at an average price of \$1.10, which figure Mr. Hood has also disposed of his output. In addition to a fine apple orchard, Mr. Hood has also ready for shipment 70 barrels of pears, which are quoted at the local market at \$2 per barrel.

\$1,500,000 FOR NOVA SCOTIA.

OF the apple crop of Nova Scotia, which this season will give 500,000 barrels for export to England, 155,000 barrels have already been shipped, the steamer St. John City, which sailed Saturday, taking 18,000 barrels. The remaining 350,000 barrels will be shipped between now and the middle of March, when the Australian apples begin to arrive. The average price netted by the Nova Scotia orchardists this season is \$3 per barrel, which will make one and a half million dollars this year for the apple growers of this province, who are located in

the counties of Kings and Annapolis. The Nova Scotia government's display of winter apples in the Crystal Palace, London, is creating much interest among British fruitcrers and the public. The exhibit is tastefully arranged, and the big court is filled with apple scent. Some Blenheims measure a foot in circumference. The Hon. Mr. Drysdale, who himself has 200 barrels for export, says the export trade this year is over half a million barrels. Nova Scotia Ribstone fetched twenty shillings last week against the usual eighteen.—*Mail-Empire*.

AN OBJECT LESSON IN SPRAYING

BY T. H. RACE, MITCHELL.

THE most striking object lesson in spraying that ever came under my observation was afforded this fall by a drive of about two miles out from the town of Simcoe. The photo-engraving given below represents very faithfully the difference between apples sprayed and not sprayed. Just outside the town of Simcoe is an apple orchard of forty acres belonging to a Mr. Quin Fick. Immediately across the road is another of twelve acres now owned by Mr. R. H. Johnston. Both these orchards have been planted between 25 and 30 years, and neither of them up to this year had ever been sprayed. Of the two the 40 acre orchard had received perhaps the better care; both had been pruned occasionally and both had borne ordinary crops. One year ago Mr. R. H. Johnston, an enterprising resident of the town, and a man of considerable experience in buying and shipping apples, bought the property on which the twelve acre orchard stands. During the month of February of this year he went among the trees and pruned them out severely, at the same time scraping all the old loose bark off. In the early spring, before the leaves came out, he gave them a thorough spraying with lime and bluestone, in the proportion of about 12 lbs. of bluestone and 18 lbs. of lime to 50 gallons of water. Asked why he used so much lime, he replied that he believed it loosened the old bark and in several ways benefited the tree. At all events he said it did no harm and had a cleansing effect. After the leaves were out he gave a second spraying of lime and bluestone, with Paris green and white arsenic added. This was repeated after the blossom had fallen, and nothing more was done till the fruit was ready to pick, except plow

the ground and sow it with cow peas. Altogether Mr. Johnston used about 1,700 lbs. of lime, 430 lbs. of bluestone, 20 lbs. Paris green, and 10 lbs. of white arsenic on his twelve acre orchard. On being asked why he used both poisons in such large quantities he replied that Paris green is oftentimes impure and uncertain, and he wanted to make a sure job of it. This latter, it seems to us, would have been accomplished with the arsenic alone even in less quantities.

Now as to results. This fall, out of thirty-five barrels of Baldwins, picked from the first rows, there was about one bushel of culls. The Spys would run even a less percentage of culls than that. From his twelve acres Mr. Johnston would sell nearly eight



FIG. 2703. APPLES, UNSPRAYED AND SPRAYED. hundred barrels at about \$2.50 per barrel, while his close neighbor, Mr. Fick, was selling his whole 40 acre crop at 75 cents a barrel in the orchard. The product of one orchard went to Chicago as prime Canadian fruit, while the other went to the local canning factory.

Prof. Zavitz, of Guelph, and myself walked through both orchards and picked what we thought to be a fair sample of the fruit grown in each. These I had photographed, and are shown in the cut above. I do not believe that a single barrel of No. 1 apples could be gathered in the whole unsprayed 40-acre orchard. And I do not believe there would be ten barrels of culls

found in the whole crop picked from the 12-acre sprayed orchard. It will be noticed, by referring to the samples photographed that the spotted apples show a light color while the other two are much darker—a fine high color. This is true of the crop in each orchard throughout.

The only question is as to whether the same results could not have been obtained with a less quantity of material used. With Mr. Johnston it seemed to be not a matter of quantity or expense. It was an experiment he was engaged in and a sure result he was working for.

PRUNING PEACH TREES

THE unusual number of questions upon the pruning of fruit trees and vines indicates that the following report of experiments in pruning peach trees, conducted by Prof. J. C. Whitten, of Missouri Experiment Station, and published in the Experiment Station Record of September, will be of interest:

The experiments followed the severe winter freezes of 1898-99 in pruning back peach trees. The cold had killed practically all the fruit buds, while the wood of the trees was badly discolored to the heart. In the experimental work some of the trees were left unpruned for comparison. With others the new wood was pruned back about half, as is the customary yearly practice. In the majority of cases with the older trees the limbs were cut back into 3 or 4-year-old wood, leaving arms in the main branches 3 to 5 feet long. Most of the pruning was done in February, soon after the freeze, though in some instances it was continued until the leaves were just starting. The following spring the trees which were not pruned at all started into leaf growth first. They made a feeble growth during the summer, the growth being confined principally to the tips of the branches. There was almost no indication of growth in the body of the tree. Trees that had been pruned back

severely were rather tardy in beginning growth in the spring. When growth finally started, however, it was very vigorous and continued throughout the season, some 6 to 9 feet of new wood being made, which ripened up well during the season. Old trees that were cut back to the ground leaving only a stump died in many cases. Those that did sprout made an unsatisfactory growth. Trees pruned back by cutting away 1-3 to $\frac{1}{2}$ of the 1-year-old wood also made unsatisfactory growth, but little better than where the trees were left unpruned entirely.

The best results were secured in pruning back into the 2 to 4-year-old wood, the severity of the cutting depending upon the age and vigor of the tree. It was observed that trees with smooth, bright looking bark sent out branches from their trunks more readily than those whose bark was thick, rough, and dull colored. There was practically no difference in the results obtained in cutting back the trees at different times from just after the freezing until the leaves had made some growth. In the rejuvenation of orchards thus severely pruned, good cultivation to properly aerate the soil in spring and to conserve moisture during the summer is advised.

A PLEA FOR QUALITY OF FRUIT

IN an address at the recent annual meeting of the American Pomological Society, held at Boston, Mr. G. Harold Powell gave some excellent advice in regard to growing fruit of first class quality. Many of the points which he brought out were noted with approval by Mr. W. A. McKinnon, chief of the Dominion Fruit Division, and are given here for the benefit of Canadian fruit growers. Mr. Powell recommended as summer apples for the United States, Red Astrachan, Sweet Bough and Williams; as autumn apples, Gravenstein and Alexander; for winter, the Greening, the Newton Pippin, which he stated had sometimes sold as high as \$20 a barrel, the King, the Spitzenburg, Baldwin, Spy and McIntosh Red. He recommended top grafting the King on two-year-old Spys, stating that in this way a vigorous tree bearing good crops would be obtained.

Regarding the Ben Davis, Mr. Powell made a very cutting criticism, declaring it had only one quality to recommend it, namely, its color; and stating that no fruit would take a prominent place in our markets or would continue to be a profitable one for growers which depends upon a single virtue for its sale.

The Champion grape received a similar castigation. Its only virtue is its earliness, and this Mr. Powell thinks has made it one of the worst enemies of the grape grower, inasmuch as the price of the Champions, at first very high, drops almost to nothing. The last price of the Champion, or what the public are willing to pay after they have become acquainted with its wretched quality, fixes the price for all other grapes which follow, though they are infinitely superior in quality to the Champion. In other words, rock bottom prices having been once fixed, it is impossible to get back to normal prices.

Mr. Powell spoke rather more kindly of the Elberta peach, but is of the opinion that it also is not an unmixed blessing to the fruit growers. It is a splendid shipper, but has no quality.

The conclusion to be drawn from Mr. Powell's remarks is that whatever transient advantages may be obtained by the grower from the production of inferior varieties, it is to his permanent advantage, and it is his only wise policy to produce the highest quality in each sort of fruit which he places on the market.

Striking testimony to the value of such advice is furnished by some reports of fruit sales just received by the Fruit division from London, England. On October 7th there were sold a large number of half cases of California and other American pears, including about a dozen varieties. The Seckel, which is generally regarded as a pear of the highest quality, though small in size, sold for 12s.; the Glout Morceau for 13s. 6d; the Calabash (similar to our Bosc) for 11s; the Comice (one of the varieties recommended by the Fruit Division) for 11s. to 12s. If we contrast these prices with those for fruit of inferior quality we must conclude that the Englishman wants only the best fruit and that he is prepared to pay for it. Bartlett's, which are certainly above medium quality, fetched 6s. to 7s.; Anjou, 9s.; Clairgeau, 7s. to 7s. 6d.; Duchess, 3s. 9d. to 4s.; Hardy, 2s. 6d. to 3s. 9d.; and Keiffers, which it is only fair to mention were "wet," only 10d. to 1s. a cask. Large quantities of Canadian apples, sold on the same day, brought all the way from 10s. to 25s. per barrel (the latter figure being for Ribstones), with the great majority at 15s. to 16s. On October 12 half cases of Comice pears were sold by the same firm for 11s. 6d., while the Duchess variety fetched only 4s. 3d., these being

the only two sorts of pears handled that day. The highest figure for apples on that date was 23s., again to the credit of No. 1 Ribstons, while the lowest prices were 12s. for No. 2 Fall Pippins, and 13s. for No. 2 Ribstons and Gravensteins. The wide variation of 10s. per barrel, between No. 1 and No. 2 Ribstons, is particularly worthy of notice, indicating as it does that quality is sure to tell.

BOXES FOR APPLES.

In view of the scarcity and high price of apple barrels this season, and of the fact that in some districts farmers find it impossible to procure barrels at any price, the Fruit Division recommends the general use of boxes. These can be had, knocked down, at almost any saw mill for about eight cents each, and they should not cost more than ten cents each made up. As these boxes hold about as many apples as a barrel, they will be found much cheaper than barrels at fifty cents and upwards. The boxes should be well and strongly nailed, and should hold about 40 pounds of fruit. The dimensions

of these boxes, used by the Grimsby shippers, are 9 x 12 x 18 inches, while the British Columbia standard box is 10½ x 11½ x 22 inches, these being inside measurements in both cases. The boxes should be made of strong material, not less than ⅝ of an inch thick for the ends, and not less than ¾ of an inch for the sides; the tops should have strips across the ends to prevent the weight of other packages, piled on top, from bearing directly on the fruit. It is also usual to leave open corners at the top and bottom for ventilation. Little or no packing material should be used, as purchasers like to find the package quite full of fruit. A sheet of cardboard at the top and bottom will materially reduce the amount of injury from bruises. But it should be remembered that even in this year of scarcity of barrels, it will not do to ship anything but first-class fruit in boxes, as the reputation of the Canadian box and of the Canadian trade in general will greatly suffer if inferior or common fruit is exported in the box or any fancy package.

THE APPLE MARKET

“ONE of the heaviest crop of apples ever before grown,” said Mr. Chas. Hart, of the firm of Hart & Tuckwell, when speaking of the big yield in Nova Scotia. Mr. Hart has just returned from the Annapolis Valley, one of the greatest apple producing sections of Canada, where the far-famed Gravensteins grow to perfection, and this year they are of excellent quality. But this season a large proportion of the crop consists of Kings and Ribstons of very fine quality. Mr. Hart during his recent visit to Nova Scotia purchased about 35,000 barrels of the best winter varieties. In this

market sales are reported of 5,000 barrels of choice winter fruit to arrive at \$2.50 to \$2.75. Other sales are reported to us of 250 barrels of choice fruit at \$2.85; 200 barrels at \$2.80; 100 barrels at \$2.75, and 300 barrels at \$2.80. Several car lots of good seconds are reported at \$2.25 to \$2.60. For round lots of apples on this market, No. 1 is quoted at \$2.75 to \$3.15; the latter figure being made for 100 barrels. Advices from New York state that Armour is in the market for apples in New York State, paying \$2.00 to \$2.25 per barrel for No. 1 and No. 2. —*Montreal Fruit Trade Bulletin.*

TENDER FRUITS AND TRANSPORTATION

FRUIT Inspector Scriver, who was stationed at Winnipeg for some time, has returned to Montreal greatly impressed with the prosperity of the west and its possibilities as a market for choice fruit. After a careful study of the trade in Winnipeg, he has come to the conclusion that the fruit growers of Eastern Canada will be able to capture and retain a good share of the western business, if they can only lay down their goods in as good condition as the fruit from California, Oregon, Washington and British Columbia. The western fruit is larger and higher colored, but has not the juiciness and flavor of the eastern article, and as the greater number of residents of Winnipeg came originally from Eastern Canada, they naturally prefer the fruit to which they have been accustomed.

The Winnipeg dealers are practically unanimous in demanding that all fruit, particularly the tender varieties, shall be packed in boxes similar to those used by Californian shippers. Hitherto Ontario peaches, pears, plums, grapes, etc., have almost invariably gone forward in baskets, which are always objected to in Winnipeg. None of the tender fruits except grapes have given results at all satisfactory when shipped in baskets. In every car of eastern fruit examined by Mr. Scriver he found from 40 to 100 baskets broken and the contents ruined. This in itself would go a long way toward wiping out the profit on a shipment. On the contrary, not a single box was found in any carload of western fruit. In those cars every tier of boxes is braced as soon as completed with stout uprights, and there is practically no injury to the fruit from pressure or jarring. This fruit is, of course, picked before fully ripe, and carefully wrapped in paper so as to stand a long trip. Even in

the case of apples the Winnipeg merchants want tender fall varieties, such as Alexanders, Snows and McIntosh Reds, and even fancy winter apples, like Spys and Baldwins, put up in the forty pound boxes.

The matter of packages can be easily remedied, but the transportation problem is a far more serious one. Mr. Bunting, president of the Ontario Fruit Growers' Association, pointed out a couple of weeks ago that the freight on a carload of fruit from Hamilton to Winnipeg is nearly \$200, and the express rate \$400. An illustration of how these rates work out was given by Mr. Scriver. A consignment of pears, on which the express charges amounted to 60 cents per basket was being sold in Winnipeg while he was there for 75 cents per basket. In other words, the express company got four-fifths of the selling price of the fruit. It may be remarked that these pears would have brought at least 25 cents per basket in Hamilton or Toronto. The lake and rail route, say via Sarnia and Fort William, is about 18 cents per basket cheaper than all rail, but this involves handling the fruit four times oftener, and the number of baskets broken owing to rough usage is so great that the cheaper route is really no advantage.

These transportation rates would not be considered so extortionate by eastern shippers if the cars were rushed forward with all possible despatch. But they are not only delayed on the road, frequently owing to the congestion of freight at Winnipeg, cars of tender fruit are left standing for days in the yards before they are run up to the city. Nearly all the large wholesale establishments have switches right up to the rear of their buildings, still they each find it necessary to keep a man who does nothing else except hunt up missing cars and try to get them switched into position to unload. Mr.

Scriver mentioned a case of this sort in which he was particularly interested. A car of Fameuse apples from Hemmingford, Que., arrived at Winnipeg on Monday, Oct. 19th, and as this shipment was from his own country, Mr. Scriver was particularly anxious to see it unloaded before leaving for Montreal on the following Saturday. However, there was no sign of the car up to Friday, when at his special request an engine was sent out Saturday morning to the yards at St. Boniface to bring the car into the city. The engine returned with the information that the car could not be found. Mr. Scriver left Winnipeg on Saturday afternoon, before the arrival of the car, which would certainly not be brought in until Monday, making a week at least that these tender apples had been lying in the yards.

EASTERN APPLES IN WINNIPEG.

Fruit Inspector Scriver says that the quality of the XXX apples shipped to Winnipeg from the east has been very good, and merchants expressed themselves as well pleased with this season's business. Apples were selling at about \$4.00 per barrel, with fancy varieties still higher. Fancy Fameuse, from Quebec, which are this year exceptionally large and free from scab, were in good demand at \$6.00 and Ontario Snows at \$5.00. Retailers and consumers in both city and country seemed to want only first-class fruit, and were willing to pay for it. The same could scarcely be said of the middlemen who naturally tried to buy in the east at as low a figure as possible. Exporters to the European markets are paying as high as \$2.25 per barrel, said Mr. Scriver, and consequently Winnipeg buyers could not get the best fruit at \$1.85, which they had been considering as about the limit of price.

There was some complaint in Winnipeg that packers were filling the barrels too full, with the result that the pressure in heading bruised the tender fall varieties to such an extent that many of the apples at the top were found to be worthless on arrival. The packers were evidently afraid of the barrels going "slack," but they rather overdo their precautions to prevent that undesirable condition.

In speaking of the apple trade in general, Mr. Scriver mentioned that this year especially there is a good demand for XX apples, and there would be a much greater call for them if buyers could be sure of what they were getting. At present this grade is very uneven in quality, and it is a question if the Fruit Marks Act should not more clearly define its characteristics. Some large packers are putting up XX fruit that is nearly equal to XXX, and they find it a hardship to compete with all sorts of culls, which may now be legally marked XX.

SHIPPING FRUIT IN BOXES.

Fruit shipped in boxes or cases does not always escape bruising, because there is frequently considerable bulge to the tops, and when the boxes are stacked up in the usual way, bottoms downward, the weight of the upper layers causes considerable pressure on the fruit. More especially is this the case when the boxes are not placed with sufficient care to ensure that each rests on both protecting strips of the one below. It has been suggested by the Fruit Division that it might be better to place the boxes on the sides in the car, as in that way there would be no weight on the bulged portion. A firm of fruit packers and exporters in Burlington, Ont., is now testing this plan of shipping and the results of their investigations will be awaited with interest.

GROWING AND MAINTAINING ORCHARDS

PROF. I. P. ROBERTS, CORNELL UNIVERSITY.

If a hole be dug in the hard field, the soil will show indications that it has lost much of its original humus. Few or no natural drainage channels will be found. The soil, instead of being light and loose, is sealed, and appears "harsh and dead." If seeds be planted it is soon discovered that the soil too often has not the power to force the embryo plant to the surface nor to push it to a vigorous growth and mature fruitage. The vegetative growth is too frequently dwarfed, which results in lack of power to bring all of the fruit to perfection. Half of the fruit on the tree not infrequently shows unmistakable signs of semi-starvation.

That this is the case is not strange if it is considered what has been taken from the soil in fifty years of cropping. Let it be supposed that during the 50 years there have been taken off of each acre ten crops each of oats, wheat and corn and 20 of hay. The following table shows the amount of grain and roughage removed in 50 years, and the value of the plant food approximately:

AIR-DRIED MATERIAL REMOVED IN 50 YEARS.

Per acre.	Lbs.	cu. ft.	Lbs.
Oats, 31¼ bush.	32	10	10,000
Straw, 1,500 lbs.	—	10	15,000
Wheat, 16 2-3 bush.	60	10	10,000
Straw, 2,000 lbs.	—	10	20,000
Corn, 40 bush.	60	10	24,000
Stalks, 10 p.c. moisture.			
4,000 lbs.	—	10	40,000
Hay, 1½ tons, 3,000 lbs.	—	20	60,000
Total			179,000
			or 89½ tons.

PLANT FOOD CARRIED OFF BY 50 ROTATIONS.

Lbs. in round thousands.	Nitrogen lbs.	Phosphoric acid lbs.	Potash lbs.
Oats, 10.	165	69	48
Straw, 15.	69	42	265
Wheat, 10.	138	78	49
Straw, 20.	240	44	126
Corn, 24.	386	137	89
Clover, 40.	416	246	792
Mixed hay, 60	882	246	792
Total	2,296	732	1,929

PLANT FOOD CARRIED OFF BY 50 ROTATIONS.

No. of lbs.	Cost p. lb.	Value.
2,296 nitrogen	12½c	\$287 00
732 phos acid.	4½c	32 94
1,929 potash.	4½c	86 80

Grand total of the value of the plant food carried off 50 years' rotation from each acre, as above, \$406.74.

In 1895, among other investigations, an attempt was made to determine the amount of plant food used by a single apple tree: 1. Plant food contained in the tree when dug up, including branches, trunk and roots; 2. plant food removed by 20 average crops of fruit; 3. plant food removed by the leaves. It was assumed that an acre would grow 35 mature trees and that all of the leaves were blown off the land, which, of course, is not a fair assumption.

The 20 estimated crops of apples removed \$147 worth of plant food. The trees contained \$70 worth of plant food, and 20 crops of leaves \$160 worth of plant food. If it is assumed that all the leaves remained on the ground, the total value of the plant food contained in the wood and removed by the apples was \$217 per acre. If one-half of the value of the plant food is in the leaves for the 20 years to be taken, the value per

acre of plant food used by the orchard would be \$297 per acre.

In either case it is seen that an orchard used more than simply sunlight and water. From many of the mature orchards, harvest crops other than apples have been removed continuously for from 20 to 50 years, in addition to the apples harvested. Is it any wonder that many of the mature orchards are far from vigorous, shy of bearing and perfect but a small per cent of their fruit? While it is true that many of our fields still contain vast stores of plant food, it is equally true that the cream of the land has been removed and that the remaining plant food is not readily available, in other words, it is tough.

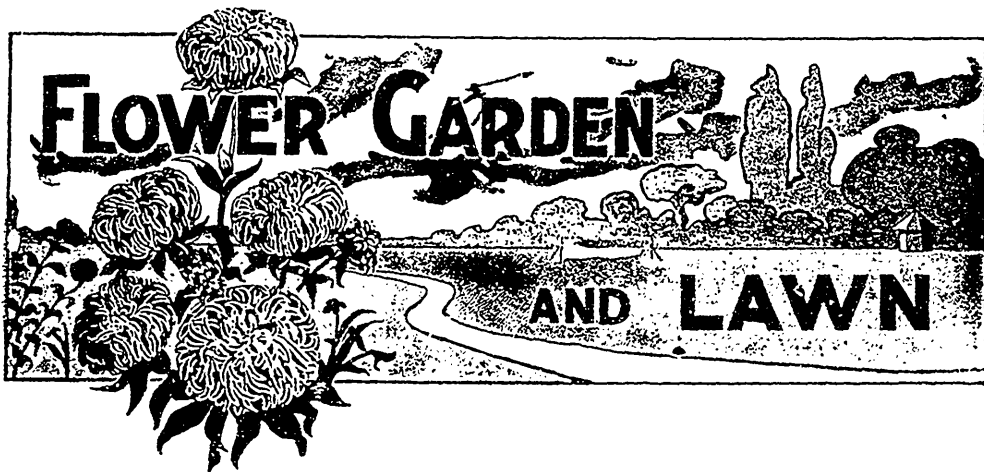
What are the conditions the fruit grower meets when he attempts to grow a young orchard? He finds that most fields have been depleted of large quantities of the most easily available plant foods. For 50 years or more, double, often three-fold, more plant food has been removed than has been returned to the soil. The soil and subsoil too have often become compacted, hard and unresponsive. The drainage channels have been obliterated and can only be restored by long tap-rooted plants or drainage. The humus so necessary for good physical condition of the surface soil and for conserving moisture and for promoting chemical and biological action is deficient or almost entirely wanting. Is it any wonder then that heroic treatment, such as J. H. Hale gives his orchards, is necessary if the young trees flourish and fruit abundantly?

Good fruit is on the average salable at remunerative prices home and abroad. When well managed, the orchard areas are by far the most profitable portions of the farm. If, then, we set new orchards we should make the conditions similar to those

which prevailed 50 or 75 years ago. This may be most easily accomplished by growing tap-rooted and leguminous cover crops, assisted in some cases by under-drainage. These will tend to promote drainage of surplus water, conserve moisture, make the soil more friable, add humus, promote chemical and biological action, and incidentally add nitrogen to the soil and oust some of the lazy potash and phosphoric acid.

Frequent and intelligent tillage will help materially in aerating the soil. It may be made to conserve moisture, liberate plant food and in all ways promote the comfort and well being of the growing or fruiting of trees. The vigorous, healthy growth resulting from cover crops and tillage makes the trees more resistant than they would be if they were uncomfortable, hungry and thirsty. On most of our soils from this on, profitable fruit growing must be founded on cover crops and tillage, supplemented, in some cases, by drainage and fertilizers.

Doctor the soil before you doctor the tree. Remove the cause, and the effect disappears. You can't cure rum blossoms with vaseline, you must break the demijohn; start the orchard where nature left off, and not where the renter did. The rivers run to the sea, overflowing the city and plain, yet the sea is not full. The waters return to the land, but the land cannot contain them. The roof of the natural reservoir is sealed because of ignorant tillage; the surface is like a leaky roof, which sheds part of the water and allows a part to pass through. The waters hasten to their home in the sea, since they are not welcomed by the land. The reservoir runs dry, the plants are sick unto death of thirst and hunger, and the bug foreclose their cut-throat mortgages.—*Am. Agriculturist*.



DECEMBER NOTES

BY

WM. HUNT,

SUIT. GREENHOUSES, O. A. C., GUELPH.

PLANT PROTECTION.—The first or second week in December is usually early enough to attend to the matter of giving some protection to plants and shrubs of questionable hardiness in the garden. As a rule the tendency on the part of plant growers is to be too good natured in this respect. In many cases the covering is applied too early in the season before the wood has had time to ripen and partially harden, or the plant had time to attain its normal winter condition; and in many cases the covering is altogether too heavy and close for the well being of the plant which it is intended to protect. Take for instance some of the more tender varieties of out door roses of questionable hardiness, such as La France, Fisher Holmes, and others of that type that are more or less of a delicate nature, especially in northern sections of the country; or take the more tender varieties of the Altheas or Rose of Sharon shrubs, of the beautiful dwarf though somewhat delicate Spirea, Anthony Waterer, and similar kinds of shrubs, these

although tender do not require a very heavy covering during winter to protect them. A good heavy mulch of manure placed over the roots of the plant after the ground has become frozen slightly, and a light covering of straw or long sedge grass, bound loosely around the growth of the plant, will be found of much more benefit than a very heavy covering of the same material, which latter would effectually exclude any circulation of air around the growth, as well as induce and retain oftentimes an excess of moisture. This will bring rot and mildew into the growth during periods of alternate frost and thaw, besides affording—especially if applied too early in the season—a splendid harbor for rats and mice that will do a great deal more harm than severe frost will to the plants. Rats and mice usually seek out their winter quarters before severe weather sets in, and are seldom troublesome if the winter covering of plants is withheld until real winter weather sets in.

The winter protection of some of the more

tender border plants, such as Hollyhocks, biennial Campanulas, etc., does not require a close heavy covering of manure. A few pieces of thick brush wood or pine boughs, with a few leaves placed under or about amongst the brushwood, is a far better and a more natural protection than the heavy covering before mentioned. The best collection of the *Campanula media* or biennial campanula that I have ever seen was brought through the very severe winter of 1884-5 with only a covering of brushwood and a sprinkle of leaves, aided doubtless by the heavy and continuous covering of snow experienced that winter. In sections where the latter natural covering can be relied on there is no doubt no better plant protector, but in Southern Ontario, where nature's covering of snow is fickle and uncertain, a light covering such as I have mentioned is certainly beneficial to tender plant life, more especially in late winter and early spring when plant life is first exposed to cutting winds and bright sunshine, two very trying factors to tender plant growth at that season.

Several other kinds of winter covering can also be made effectual for plant protection. Tea chest matting, or mats made of sedge grass or rushes make good plant protectors. Or an apple or flour barrel without a top, turned bottom up over a rose bush or shrub, will afford ample protection as a rule. A light covering of straw or leaves placed around the plant, before the barrel is put over it, will materially assist its effectiveness. But barrels are unsightly objects on a lawn, pine boughs and even straw being much less unsightly and equally effective if carefully placed. If a barrel is used a few holes should be bored in the side to admit air.

In protecting spring flowering bulbs, or tender Japanese lilies where planted, a much heavier covering of manure can be used. In the case of the lilies they should be covered

with at least ten or twelve inches of protective material, whether it be leaves, straw or long strawy manure. These beautiful mid-summer flowering lilies can be successfully grown and flowered year after year in light well drained soils, if heavily protected during winter.

A covering of three or four inches of the materials mentioned will be ample for hyacinths or any of the spring flowering bulbs. Tulips, crocus, snowdrops and most of the narcissi really require no protection so far as hardiness is concerned, but I have found that these even come through the winter better with a light protection, more especially if the bulbs were planted late in the autumn, or perhaps during early winter.

CHRYSANTHEMUMS.—Plants of these, when the flowers have become shabby, should be cut down to within an inch or two of the soil, and the pot stood in a cool window and not given too much water for a time, the soil should never become dust dry, but should be kept only fairly moist. When water is given the plant, sufficient should be given to moisten all the soil, and no more given again until the soil shows signs of dryness. Old plants of these popular autumn flowers can be kept over if treated as I have described. They can be planted in the open ground usually about the end of April or early in May and grown on for next season's flowering. The tops of the growth should be kept pinched off as soon as the growth attains the length of four or five inches. This operation will require attention from April until July if good, bushy plants are wanted. Or cuttings of the young growth about four inches in length can be stuck in sand in March, and the cuttings potted into good soil as soon as rooted. The young plants should be kept pinched back until July as recommended for the old plants. Chrysanthms can be grown during the summer in large pots or planted out in the open ground and taken up

and potted before frost in the autumn. The pinching process as mentioned is necessary in all cases, if good plants and plenty of bloom is expected.

Amongst the new varieties sent out in the spring of 1903 that have been tested at the College, a deep rich yellow flowered variety, H. W. Buckbee, promises to be the best and most suitable variety for pot culture, being of a fairly dwarf and very robust habit, very similar in that respect to the old favorite, W. H. Lincoln, the color of its flowers being very similar, but even a more intense yellow, whilst the form of the flower is a decided improvement on the W. H. Lincoln variety. Other new varieties that deserve special mention are Globosa Alba, a pure white incurve; W. R. Church, having an immense bronzy crimson and old gold flower; Madame Marie Liger and Mdme. L. Chevrant, both having silver pink and white flowers, are both very pretty varieties, whilst the tall growing variety, F. L. Taggart, with its large beautifully semi-incurved lemon yellow flowers is a decided acquisition to the hairy type of chrysanthemums, being much more representative of its class than any of its predecessors that are such favorites, such as Louis Gochemer, Beauty of Truro, *Enfant des deux Mondes*, etc. It would be difficult to say which was the most admired by the crowds who have visited the O. A. C. to see the 'mums during the last week or two, whether the last mentioned variety or the variety, H. W. Buckbee. The latter is, however, certainly the most suitable for a

pot plant. Miss Minnie Baily, a dwarf growing variety, having a bright pine rosette-like flower, also deserves special mention, as it is a decided improvement both in habit of growth, color and form of flower than the two varieties it was derived from, viz., Lavender Queen and Mrs. L. Perrin, both popular and well known varieties. The variety Miss Elma O'Farrell, introduced in 1902, is a grand flower, its extremely robust habit and its immense, rather flat shaped, but bright rosy magenta colored blooms, makes it a decidedly conspicuous and pleasing relief to the almost innumerable varieties and shades of color we have amongst the yellow, pink, dark and white varieties. No amateurs' collection of mums at least should be without this decided innovation in form and color amongst chrysanthemums. I may possibly be able to give in the next issue of the Journal a cut of one or two of these newer varieties of chrysanthemums that will show at least the form, if not the colors and shades of the new varieties mentioned.

GIVING AIR TO WINDOW PLANTS.—Fresh air is beneficial to window plants, but cold draughts should be strictly avoided. Open the top sash of the window, or open a window in an adjoining room when the room where the plants are requires ventilating, or remove the plants from the window if the bottom sash must be opened. There are very few days during the winter months that it is desirable to give direct ventilation on even the hardiest kinds of window plants.

THE NARCISSUS ABOUT THE FRUIT GARDEN

BRIGHT yellow jonquils and daffodils do better than well in corners and along the sides of the square or parallelogram that defines the orchard. Jonquils and daffodils are early, flowering in March. The bulbs are only 50 cents per dozen, and

once planted will multiply and bloom ever after: frequently marking the sight of long abandoned places. Outdoor planting is decidedly the best, in the south, for these hearty bulbs. Plant them not less than ten inches deep: locate them in the sunshine.

FLORAL NOTES

BULBS FOR THE WINDOW.

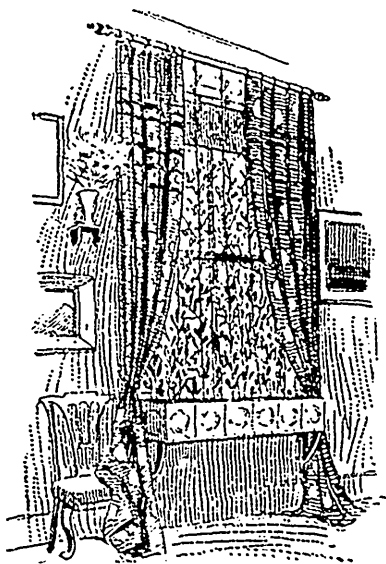


FIG. 2704. A WINDOW GARDEN.

VERY few homes in Ontario indulge in the luxury of a private greenhouse; it is therefore upon the window garden that most of our lady amateurs must depend for the practise of floriculture in winter. Many ladies, ambitious to excel, and fond of their floral treasures, attempt to grow too many varieties and find that they do not agree over temperature, or moisture, or sunlight, and in consequence that many of them look sickly and fail to bloom. Far better make a study of a few plants at a time, learn to know the conditions of their success, and then add by degrees to the collection.

Winter flowering bulbs are a very interesting class of window flowers for the beginner, and now is the time to make one's purchases.

"Last winter," says a writer in *Country Life in America*. "I learned for the first time how easily and cheaply one may have

flowers in the home throughout the winter months if the bulbs are secured in the early fall and planted at intervals.

"We purchased only five bulbs of choice varieties, and the cost did not exceed the expense of a blooming plant or two at Christmas or Easter time. Moreover, half the pleasure derived from plants and flowers comes from watching their wonderful growth and development.

"We procured a number of four, five and six-inch pots, some fine, clean sand, and a quantity of well-rotted manure. The kind of manure suitable is practically odorless and easy to handle, and should be chopped or crumbled fine. We next mix the sand, manure and dry garden soil, using equal parts of each, and after the bottom of the pots had been covered with pieces of coal or crockery for drainage, the bulbs were planted at a depth below the top varying from one-fourth of an inch to an inch, depending on the size. After the bulbs had been watered thoroughly they were placed in a dark, cool corner of the cellar, where they remained until the tops were well above the soil. When in the cellar we did not water them oftener than once in ten days, but when the pots were transferred to the sitting-room they were given moisture each day. In from three to twelve weeks the pots were full of roots, and as the tops appeared above the soil one could not help but wonder how they had managed to keep their faces so clean and white."

Among the bulbs which are easily grown, and which give much satisfaction, we may mention the *Narcissus*, which may now be had in a great number of interesting varieties.

After an experience with a dozen varie-

ties, says the writer above quoted, we unite in awarding the blue ribbon to the Paper White narcissus. We started in by purchasing a dozen Paper Whites, but before the winter was over we had planted nearly two hundred of them, and there was hardly a day from October first until the crocus blossoms outdoors had hailed the advent of spring when we did not have a pot of these flowers in bloom. The last were not even planted until the middle of February, but the flowers were nearly as fine as those grown months before. The Paper Whites possess nearly every quality that makes a bulb desirable, as they are cheap, grow rapidly, are sure bloomers, the foliage remains green and attractive long after the blossoms are

gone, and the fragrance, grace and beauty of the flowers themselves are unexcelled. We consider them superior even to the favorite Chinese lily, as the flowers last longer and the fragrance is much more delicate. We discovered a novel and very successful method of growing the Paper Whites, a half-dozen or more bulbs being placed on a two-inch layer of sand in a jardiniere or deep lily bowl, and covered nearly to the tops with sand and gravel, with stones of sufficient size to hold them firmly in place. They were kept in a dark corner of the room for two or three weeks, and in about six weeks the flower-buds, each containing a dozen flowers, were ready to burst.

THE WITCH HAZEL

(HAMAMELIS VIRGINICA)

THIS peculiar shrub, or small tree, is of the Hamamelaceæ family. It differs from hazel-nut, filbert, or cob-nut, which are all of the Corylaceæ.

The witch hazel is common in damp woods all over the United States and its peculiarity of producing flowers in the autumn is the same irrespective of climates. From the shores of Lake Michigan, south, the bushy, many angled little tree will clothe itself in light yellow flowers after the leaves have fallen from all the trees of the forest surrounding it; and although Gray and Wood are good authorities, in their botanies, that "the witch hazel blooms from November to January," observation has shown the writer that the blooms begin to open in September before the leaves are cast. In October the leaves fall and still more flowers appear, and in November every leaf will have been stripped from the tree and the full flush of blooms will clothe

the branches from end to end. The flowers are perfect, or merely polygamous and in clusters on the curiously and sharply angled branches, and the stamens and petals show plainly how they are inserted in the calyx. Now, after November the stamens appear deadened, but the petals retain their golden hue, which is the reason our botanists have for saying it blooms till January.

By a right combination of circumstances the witch hazel in yellow blooms will be covered with snow and the holly ice, when side by side with it is bright with berries. Until after January the flowers cling to the leafless branches, and then another curious phenomenon appears. At this stage the fruit, or seed, is edible, and hangs on the branches until spring. The little fruit consists of an oblong, woody case, about half an inch in length, inclosing two hard nutlets somewhat resembling the seeds of an apple. These seeds are expelled with a

snapping sound, and any one curious to witness the phenomenon may stand near the witch hazel on a warm, dry, sunny day, and see it sow its seeds. The case splits nearly to the base, and after the seeds have been sent bounding, the appearance of the seed cases is like the wide open mouth of a serpent. It is an interesting experiment to cut the branches with the embryo fruit and keep them in a worm room until the expulsion sends the seeds bouncing around the room. Arboretums may well be adorned with these interesting trees native to our forests. Parks are interesting when adorned with shrubs and trees of marked and unusual features, and such is the char-

acteristic of the witch hazel. The foliage is obovate or oval, wavy, toothed, and straight veined, slightly downy and alternate, not unlike the filbert or hazel nut.

Among the belated flowers, aster and golden rod, it is charming to the senses to come suddenly upon the wildling witch hazel in bloom. The sweet perfume invariably makes the proximity of the tree known, and it is curious to note the manner in which the light yellow blossoms cling to the tree. They are almost without stems, and are set in neat little nests up and down and all around every limb, seeming to nestle against the branch after the leaves have fallen.—*Park and Cemetery.*

SWEET PEA CULTURE.

I HAVE been asked to give my rules for growing sweet peas for the finest flowers, and the longest-season of bloom. One—Always sow the seed early. Peas are the first seeds I put in the ground, and this just as soon as the soil can be worked. The advantage in this is that the plants need the strength that comes from early spring growth in order to carry them thriftily through hot weather. Two—Prepare the soil deeply and include some bone in the manure. Wood ashes also are excellent, as they keep the soil damp. Three—Sow in trenches something like old-fashioned celery trenches, about four or five inches deep. The

seed should be covered with two inches of soil at the first, and then fill in almost but not quite enough soil in the trench later as growth proceeds, to bring the top even. The slight depression is useful for summer watering in case of drouth. Four—In the summer mulch the line of peas, and apply water liberally at times if the weather is dry. Lastly—Pick all flowers before they drop, in order to prevent seed bearing, which is fatal to continuous bloom. Follow this course and any one can grow sweet pea to perfection, which means to have plenty of flowers the season through.—*Pick's Magazine.*

Civic Improvement

A DEPARTMENT DEVOTED TO THE INTERESTS OF THE HORTICULTURAL SOCIETIES OF ONTARIO, AND OF ALL OTHER BODIES INTERESTED IN THE IMPROVEMENT OF THE SURROUNDINGS OF OUR CANADIAN TOWN AND COUNTRY HOMES.

CIVIC IMPROVEMENT NOTES.

BY THE EDITOR.

A CANADIAN FLAG AS A PRIZE TO SCHOOLS.

THE plan of enlisting the children in the improvement of their grounds is truly a most worthy one. Mr. G. R. Patullo, of Woodstock, our field secretary, originated a plan of giving a Canadian flag in each district to the public school making the greatest improvement in the grounds and surroundings of the school buildings during the summer of 1903.

A VISTA WHICH IS WORTH MORE THAN FLOWERS AND CARPET BEDDING.

THERE are few people who do not appreciate a fine landscape, or a pretty view half hidden by tasteful plantings of shrubbery and trees, and yet not one in twenty is able to analyse the picture into its component parts, or, given the ground work, to so dispose the plantings of trees, shrubs and climbers as to create a picture. To do this one must not only be an observant student of nature, but must also have an artistic genius.

About Hamilton, with the bay on the north and the wilton inlets on the west and the mountain on the south there is material

that could be worked into most delightful park scenery by a landscape gardener, with comparatively little expenditure.

There is a fad with some gardeners for ribbon bedding, and there are places where perhaps a ribbon bed may be the most appropriate thing, as in a small city lot which is too small to be treated for landscape effect: but in large pleasure grounds, or in a public park, such work is entirely out of place.

PARK MAKING IN CANADA.

FREDERICK G. TODD, of Montreal, Quebec, has been selected to prepare plans and assist in drawing up reports for the future improvement of Ottawa as the Canadian capital. The commission recently appointed by the Dominion government to prepare a report on this work intends to acquire large areas of land for park purposes both inside and outside of the present city limits, and to lay out a connecting system of boulevards. The magnificent situation of the Parliament buildings, and the fact that the government owns a large part of the rugged and picturesque shores of the Rideau river, which runs through the

city, makes possible a beautiful scheme. Mr. Todd has recently made plans and submitted a report for the improvement of the grounds of Trinity College, Toronto, which embodies some interesting landscape problems.

IMPROVEMENT OF SCHOOL GROUNDS.

THE Youth's Companion will present to the 500 schools of the State of Illinois doing the best work in school improvement, a set of six historical pictures, and to the ten of those doing the best work, a large American flag.

SHRUBBERY ABOUT THE HOUSE.

TO one who has been accustomed to plenty of shrubbery about the house, it is surprising how noticeable is the want of it in the majority of lawns, and what a bare and forsaken look such places seem to present. Shrubs have a double value, one in their intrinsic beauty, another in their use. If the former be the special consideration, then they should be chosen with great care as to foliage, color, bloom and such characteristics; but if the latter, their individuality is of little importance so long as they accomplish the desired objects. One of these is the hiding of fence boundaries, of well curbs, of outhouses, of gravel roadways, or anything which breaks up the continuity of the lawn view. For

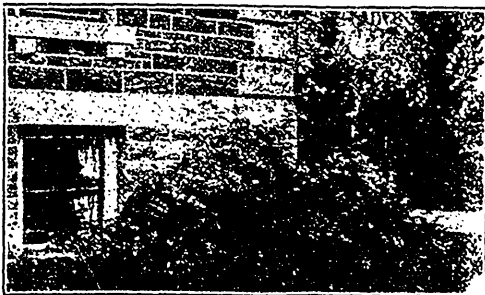
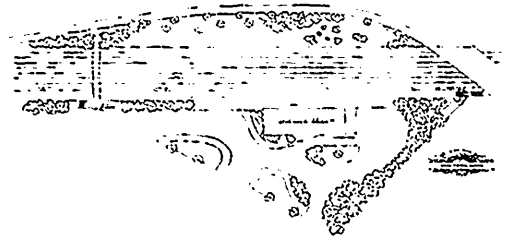


FIG. 2705. SHRUBBERY TO HIDE FOUNDATION

such plantings it is not necessary to buy expensive plants from the nursery, for any wild bush will furnish a variety collection sufficient for liberal planting. Too often the home maker leaves his house fully exposed from the foundation up, quite unconscious of the nakedness which the house presents unless the foundations are at least partly clothed with clumps of shrubs. This is fairly shown in the accompanying engraving, where even a single shrub has done wonders in breaking up the angularity of the mason work.

STATION GROUNDS.

ATTENTION has often been called, in these pages, to the possibilities of



Plan of Station Grounds, Auburndale, Mass. Boston & Albany R. R.—Considered local in arrangement and display.

FIG. 2706. PLAN FOR STATION GROUNDS.

making these attractive, as has been shown in so many instances along the line of the Boston and Albany Railway. On most roads these places are so barren that waiting is a weary season; but it would be possible, by a little treatment, to make these station grounds so attractive that the waiting season would be delightful; and not only so, but they would afford a valuable object lesson on the treatment of a lawn, which could in many instances be copied in part at the homes of the travelers.

As an example of what may be done in this direction, we give the plan of the station grounds at Auburndale, Mass.



PL. 2707. VIEW FROM HAMILTON'S PROPOSED MOUNTAIN DRIVE.

WORK OF THE CIVIC IMPROVEMENT SOCIETY, OF HAMILTON.

CITIZENS who during the past few months have been paying special attention to the care of their lawns, window boxes, rockeries, etc., received their rewards last night in the City Council chamber. It was the annual distribution of the City Improvement Society's prizes, and the room was scarcely large enough to accommodate the crowd of interested competitors and spectators. The floral decorations which were arranged by the ladies of the society were beautiful, and reflected much credit on the artistic taste of the ladies. This year the society handed out over \$300 in cash prizes, besides the five handsome gold

medals donated by Mrs. W. E. Sanford for the best kept lawns.

R. T. Steele, president of the society, occupied the chair, and seated on the dais with him were Judge Snider, Rev. Canon Forneret, N. D. Galbreath (secretary), and A. Alexander.

In his opening address President Steele said that the presence of so many citizens satisfied him that the citizens generally were interested in the work of the society. The movement started by the Hamilton society was spreading. Even Ottawa has taken up the work of city beautification, and purposed spending much money on it. The

matter of city improvements was no longer considered a fad. It was a necessity. In that respect Hamilton was ahead of any other city on the continent. After hearing the remarks of visitors to the summer carnival he was satisfied on that point. The work of the City Improvement Society was doing much to advertise the city. Continuing, Mr. Steele referred to the fine condition of the grounds surrounding T. Upton & Co.'s factory. He hoped many other manufacturers would follow Mr. Upton's example in future years. The school surroundings and church surroundings had been improved during the last year, but in the latter case there was still room for improvement. Getting down to the civic matters, Mr. Steele said that the board of health was not given a fair chance by the aldermen. It was never given sufficient money to do its work properly. He criticised the aldermen for cutting down the board's grant this year so that the system of semi-weekly collection of garbage during the summer months had to be abolished. He was glad that the trees had been handed over to the care of the parks board. They were one of the city's most valuable assets and would now be properly cared for. Regarding the work of the police, he had no complaint to make about the officers, yet they did not give the society and board of health the support they should. The cause thereof was that there were loopholes in several of the by-laws. These should be plugged up. The society expected to get the Beckett drive fixed up and opened to the public very shortly. In conclusion, Mr. Steele said that he hoped that it would not be long before the city would have a by-law making it an offence to spit on the sidewalks. He then read a letter from Chairman Stewart, of the board of works, expressing regret at his inability to be present.

Secretary Galbreath was the next speaker. He explained the nature of the work

which the society undertook this year and gave credit to President Steele, Mrs. Sanford and F. B. Greening for assisting the society financially and otherwise, in making the competitions a success.

The presentation of prizes then began. Rev. Father Holden, superintendent of the separate schools, and James Chisholm, chairman of the Board of Education, presenting the prizes for attractive window boxes.

Father Holden said he was pleased with the work being accomplished by the society. He was particularly interested in the work among the school children. That he considered was a most important branch of the work, for the children of to-day would be men and women of a few years hence. As a result of the efforts of the children the grounds surrounding the separate schools had been made more beautiful this year than ever before.

Mr. Chisholm said it was a privilege for him to be present to represent the Board of Education. The board did not claim any credit for the success of the society's scheme. The board, previous to this year, had been dilatory, and was thankful to the society for calling its attention to the fact that the grounds surrounding the schools required some care. The society was doing a great work for the city, and personally, he wished it every success. It had made Hamilton one of the most beautiful cities in the world.

The presentation of prizes donated by President Steele for corner rockeries came next, the presentation being made by Mrs. Steele, assisted by F. B. Greening.

Mr. Greening made a few remarks. He said the corner rockery competition was, in his opinion, among the most important of the society's competitions. The rockeries were useful, as well as ornamental, for they prevented careless people from cutting across the corners and thus destroying lawns. He hoped more corner rockeries would be built next year.

Mrs. F. B. Greening, assisted by A. Alexander, presented the prizes for rockeries.

Mr. Alexander agreed with the previous speakers that as a result of the society's work the city was each year becoming more beautiful. He was proud to be a member of such a society. He urged all citizens to assist the society by becoming members.

It fell to the lot of John H. Tilden, chairman of the parks board, to announce the result of the ward foremen's competition. He thought all the foremen were entitled to great credit for the cleanliness of Hamilton's streets. As a result of their efforts Hamilton was known all over the country as the cleanest city on the continent. It was impossible for the judges to say which was the best kept ward, and for that reason it was decided to give the prize, \$25 in cash, to them to divide as they saw fit.

Thomas Towers, president of the Ward Foremen's Association, accepted the prize from Mr. Tilden's hands, and thanked him for the kind words he had said about the foremen. There was no doubt that the society was doing good work. The foremen were no longer troubled by people throwing waste paper, grass, etc., on the streets.

The gold medals, donated by Mrs. Sanford, as first prizes in the lawn competition, were presented by J. J. Greene, in the absence from the city of Mrs. Sanford. In doing so, Mr. Greene said he was sorry the donor was not present to present the medals herself. He was sure that it was a pleasure to Mrs. Sanford to assist in furthering the aims and objects of the City Improvement Society, and that she would like to have been present to congratulate the successful competitors. The citizens were indebted to President Steele and his society for making Hamilton such an attractive city. They were making it to the advantage of manufacturers to locate here and were doing much to make Hamilton an ideal city and advertise it as such. He hoped that before

long the parks board would take hold of the mountain brow, especially the eastern slope, and make it a pleasure park for the citizens. He hoped the day was near at hand when the destruction of the brow of the mountain by quarrying operations would be stopped.

Judge Snider presented the second, third and fourth prizes in the lawn competition. He, too, made a few appropriate remarks. As a police commissioner, he thought the police officers were doing their best to assist the society in its good work. He spoke words of congratulation to the winners of prizes and words of encouragement to those who entered the competition but were not fortunate enough to win prizes.

Adam Brown moved a vote of thanks to the ladies who so tastefully decorated the Council chamber. In doing so he said he was pleased to receive his prize from the hands of Mrs. Greening, a woman whose husband's father had done more than any other man in the British empire to cultivate a love for flowers. Among the humbler classes in England his name was called blessed. In conclusion, he referred to the excellent support the society has received from the ladies.

George C. Copley moved a vote of thanks to the press and the reporters, and presented to each reporter a suitable souvenir of the annual distribution of prizes. Cal. Davis responded on behalf of the scribes.

Rev. Dr. Lyle moved a vote of thanks to the judges, whose work, he said, had been faithfully and well done, and Rev. Canon Forneret moved that the thanks of the society be returned to the corporation for the use of the Council chamber.

All the motions were heartily carried.

A feature of the evening's proceedings was the presentation of a handsome clock to Newton D. Galbreath by W. A. Robinson. After referring at length to the great improvement in the city during the past few years, Mr. Robinson went on to speak of the

important part Mr. Galbreath, in his official capacity as honorary secretary of the City Improvement Society, had played in the city's Improvement. He reviewed the history of the society from its inception, and gave Mr. Galbreath a lion's share of the credit for its birth and its successful career.

Mr. Galbreath made an appropriate reply.

The last item on the somewhat lengthy program was the presentation to St. Vincent's school of the handsome flag won in the separate school competition. The pre-

sentation was made by Mayor Morden, who wound the flag about the neck of Rev. Father Holden, superintendent of the separate schools. As he did so James Johnson began to sing *The Maple Leaf*, and the audience rose and joined in singing the chorus.

A large number of plants, as well as cut flowers, used in decorating the room was loaned by Webster Bros. The collection included some *Eulalia* grass, which attracted much attention.

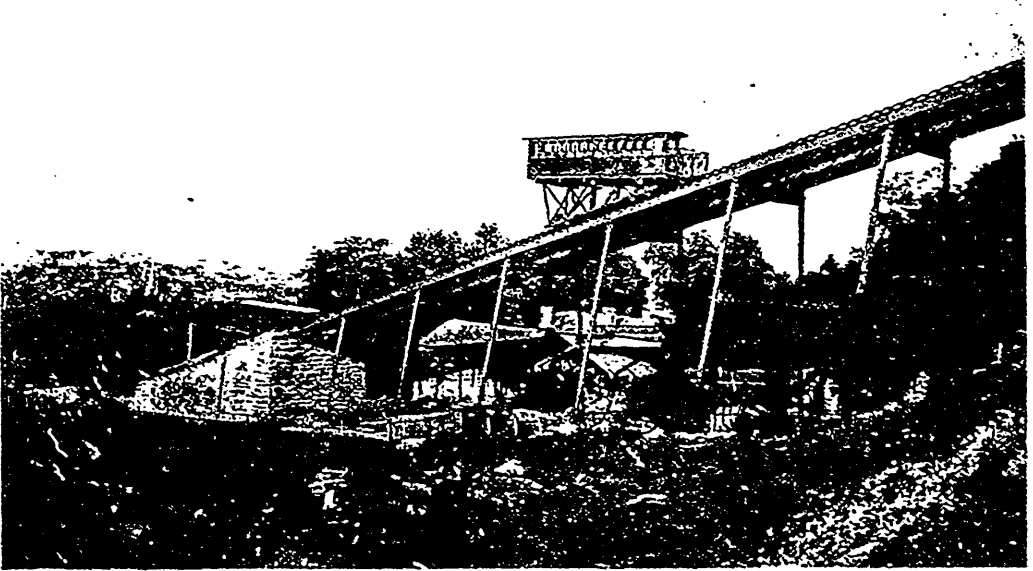


FIG. 2708. THE INCLINE RAILWAY TO THE MOUNTAIN DRIVE.

EAT APPLES AT NIGHT.

"EVERYBODY ought to know," says the Family Doctor, "that the very best thing they can do is to eat apples just before retiring for the night. The apple is an excellent brain food, because it has more

phosphoric acid in easily digested shape than any other fruit. It excites the action of the liver, promotes sound and healthful sleep, thoroughly disinfects the mouth, and prevents indigestion and throat diseases."



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 of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of 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.

SHIPMENT OF FRUIT

DISCUSSED BY THE CONVENTION AT LEAMINGTON. THE ADVANTAGES OF CO-OPERATION AMONG GROWERS
—BEST VARIETIES FOR NORTHERN ONTARIO— REMISSION OF DUTIES ASKED FOR.

LEAMINGTON, Nov. 25.—At this morning's session of the Fruit Growers' Association Mr. E. C. Gaston, of Craighurst, presented the report of the Transportation Committee. They were particularly concerned in the matter of freight rates to the Northwest, which would soon be the greatest fruit market for our products. The fruit growers had had some influence in having an act put through to establish a railway commission. When it should be appointed they would have to consider the matter of having their interests properly represented before the commission. Mr. W. H. Bunting opened the dis-

ussion. The arrangements made by co-operation in some places had reduced the burden of express charges. But still, in reference to the service rendered, the express charges were out of all proportion.

Mr. L. G. Rice, of Michigan, asked whether any consideration had been given to the opportunity of shipping by steamer from Sarnia and neighboring ports to Port Arthur and Duluth. The vessels came from Lake Superior points with freight, and were glad to get freights back at almost ballast rates.

Mr. G. C. Gaston pointed out the double handling that was necessary for a joint lake

and rail shipment, which constituted a great difficulty.

FRUIT MEN'S NEEDS.

Mr. A. McNeill, of Ottawa, outlined the fruit men's needs. They wanted a change in classification of several kinds of fruit. Apples should be in class 8 instead of class 5. They wanted different arrangements about mixed cars. They wanted better local rates and lower rates on cull apples. One of their greatest wants was better accommodation at stations, and for tracing cars en route.

Mr. W. L. Smith, editor of *The Farmer's Sun*, dwelt upon the necessity for co-operation among all the farmers so as to present their claims upon transportation companies before the railway commission. Mr. H. W. Dawson, of Dawson Bros., Toronto, said that there was no class of freight paying higher and more disproportionate charges than fruit.

Mr. E. D. Smith, M. P., of Winona, said that the railway commission should have two men representing the producers of Canada and one should be a practical farmer. If two members should represent the railways, the producers would be in no better position than before.

The following committee was appointed to attend to the question of transportation: Messrs. W. H. Bunting, St. Catharines; R. J. Graham, Belleville; H. W. Dawson, Toronto; D. D. Wilson, Seaforth; W. L. Smith, Toronto; D. J. MacKinnon, Grimsby, and J. M. Shuttleworth, Brantford.

OCEAN RATES.

Mr. L. Woolverton, Grimsby, introduced the question of ocean rates. He had shipped Bartlett pears last summer, and much of the fruit had been seriously injured by the temperature in the fruit compartments on the vessels being too high. If a certainty of temperature could be obtained on

the ocean vessels a good trade could be done in England.

Mr. W. W. Moore, of Ottawa, chief of the market division of the Department of Agriculture, explained that the difficulty complained of by Mr. Woolverton was that the steamers' cold storage compartments were too closely packed, and the chamber could not be properly cooled in the centre. In another case, on the steamer *Cicilian*, the fruits sent by Mr. Woolverton and Mr. E. D. Smith were over-ripe before leaving Montreal. A quantity of California fruit sent in the same chambers turned out splendidly at Glasgow.

Mr. E. D. Smith, replying, said that some of the blame was due to the railway for delay in delivering at Montreal.

In keeping with the suggestion for the appointment of a committee on organization, with reference to co-operative work, the following were appointed: Messrs. G. W. Cody, Leamington; Robert Thompson, St. Catharines; A. W. Peart, Burlington; A. E. Sherrington, Walkerton, and Wm. Rickard, M. P. P.

A resolution was passed urging the Government to remit the duties on raw sugar for canning, and on fruit packages, and asking for legislation to compel canners to label canned preserves to show the actual contents, and that such goods be labelled "Made in Canada."

Mr. A. C. McNeill read a brief address upon fruit packages. Uniformity of packages was a great essential. He recommended the use of a standard apple box 10 by 11 by 20 inches. The matter was referred to a committee.

BENEFIT OF CO-OPERATION.

In the afternoon Mr. W. H. Owen, of Catawba Island, Ohio, spoke of co-operative fruit packing and marketing. He dwelt most strongly upon the value of a central packing house system, where the fruit is collected and graded, and the commission

merchants and buyers come to buy. Mr. A. E. Sherrington, of Walkerton, explained how the co-operative system had worked in Bruce county, where it is being given a trial. In the handling of apples it had been a great benefit to the fruit growers. Many other members discussed the matter, all being convinced of the value of such a plan.

Prof. L. R. Taft, of the Agricultural College, Michigan, gave an address upon peach-growing in Michigan. The people of Michigan had found the most profitable peach for their orchards and markets to be the Alberta. The FitzGerald and others which had good records in Canada had not done well in Michigan.

THE GOVERNMENT EXPERT.

Prof. W. T. Macoun, horticulturist at the Ottawa Experimental Farm, spoke upon hardy fruits for northern districts. From the present northern limits of commercial fruit growing there was a district of some 500 miles to James Bay. There was no probable reason why apples should not be grown as far north as James Bay. Sun scald, root killing, blight and mice were the principal causes of failure at present in northern localities. Prof. Macoun explained the methods by which these troubles could be overcome, as found by experiments at Ottawa.

Dr. Wm. Saunders, director of the Ottawa Experimental Farm, supplemented Prof. Macoun's paper with an account of the work done by the experimental farm in the way of testing fruit trees for use in the northern parts of Canada and in the northwest.

Mr. W. A. MacKinnon, chief of the fruit division of the Agricultural Department, Ottawa, spoke upon power spraying. In a district near Woodstock under unfavorable conditions the cost of power spraying was four cents per tree per application, and the result was that there was great difficulty in

finding scabs on sprayed trees. On unsprayed trees there was difficulty in finding any fruit trees free from scabs.

Mr. W. H. Owen said that the co-operative farmers of Catawba Island, Ohio, had gone in for power spraying, and had had much success.

A vote of thanks was tendered to the American fruit growers present.

OFFICERS ELECTED.

The nominating committee reported the officers for the coming year. Their report recommended the re-election of all of the officers and directors. The principal officers therefore are: President, W. H. Bunting, St. Catharines; vice-president, A. McNeill, Walkerville. Mr. W. W. Cox, of Collingwood, was replaced on the board of directors by A. E. Sherrington, of Walkerton.

A committee was appointed, consisting of Messrs. W. H. Bunting, A. McNeill and Murray Pettit, to act with kindred societies in matters of mutual interest.

JANUARY NUMBER.

In the January number of this journal much prominence will be given to topics discussed at the annual meeting, and altogether we hope to make it especially attractive to all our readers.

AN ITEM having appeared in a Toronto paper about a squash weighing 104 pounds, the Goderich Star rises to remark something about what can be grown in Huron county. It says: "Without going so far back as Mr. Wm. Warnock's champion squash at the Chicago World's Fair, weighing over 400 pounds, last year he grew one weighing 322 pounds, and John S. Howrie one weighing 308 pounds, and this year Mr. Howrie gained a Rennie prize with one of 285 pounds. When it comes to growing squashes Goderich can beat the world."

Open Letters.

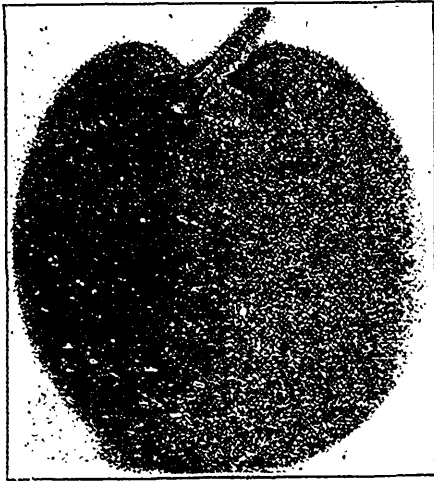


FIG. 2709 HILL'S SEEDLING PEACH.

HILL'S SEEDLING PEACH.

SIR, I send herewith a sample of peach grown in my garden at Orangeville, in the County of Dufferin, during the present season. I also send a photograph of a group of peaches, part of the crop of a dozen or so taken from the same tree on the 8th instant. They appear to me to have merit, not only as to size and color, but as to flavor. The tree upon which they were grown is a chance seedling growing about twenty five feet from the east side of my house, without having had any protection or special care. It is about six years old, twelve feet high and some three inches in diameter. This is the first year it has fruited—some bloom last year did not mature to fruit. I send you these particulars because of the fact that the results have been obtained at a point near the height of land in the central portion of Ontario—over twelve hundred feet above the lake level at Toronto. I would be pleased if you would express some opinion upon the matter. Doubtless in the Niagara section the variety might prove a useful late peach.

SIR, I have been reading your "English Horticultural Notes" with much interest, and thought you would be interested in seeing a sample of a large apple, the "Nancy Jackson," which grew on one of my dwarf apple trees, purchased from Thos. Rivers & Sons, of Sawbridgeshire, England. I have planted my dwarfs 9 x 9, but in Bungards Nurseries, at Maidstone, in Kent, I saw them planted 6 x 6 feet; they had been planted for twenty years and looked beautifully healthy.

London.

S. P. COLLYER.

Our Book Table.

REPORT OF THE DIRECTOR OF EXPERIMENTAL FARMS FOR 1902. By Wm. Saunders. L.L.D., Ottawa; also

EVIDENCE OF DR. WM. SAUNDERS, before the Select Standing Committee on Agriculture and Colonization, 1903.

**A Golden Rule
of Agriculture:**

Be good to your land and your crop
will be good. Plenty of

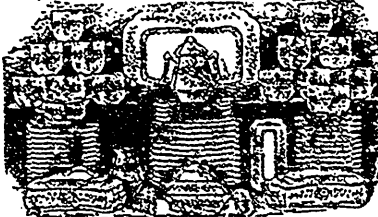
Potash

in the fertilizer spells quality
and quantity in the harvest. Write us and
we will send you,
free, by next mail, our money winning
books.

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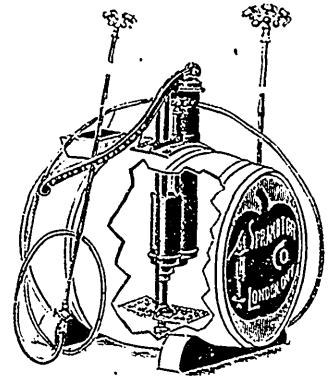
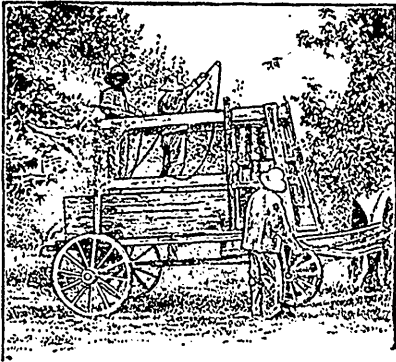
F.F.F.F.
FULL SIZE.



They are handsomely decorated with blue, green and gold. Or we will allow you 50 per cent. commission for selling our assorted remedies.

To anyone who will prove we do not do as we advertise. We want to have our marvellous household remedies used by every family in America, and we intend to give away at least 25,000 DINNER SETS in order to do this. Do you want one? Please note the only conditions: Send us your name and address and we will send you eight boxes of our remedies; sell each box at 25c, and return us ONLY \$1.00 of the \$2.00 received for the sale of our medicine. This \$1.00 is to show your good faith and that you really want the dishes. The second dollar you send us ONLY after you receive the dishes and have actually used them, and are entirely satisfied that they are equal to any \$1000 set you can purchase in the country. We trust you with the dishes and also with \$1.00 received for our medicine. We do this because you may have been fooled by some fair concern; and we want you to thoroughly appreciate our honesty. The dinner set consists of six pieces, and is FULL size for family use; including soup plates, dinner, tea, and bread plates; cups and saucers, cover dishes, coffee pot, butter and milk pitcher.

COLONIAL MEDICINE COMPANY, No. 71 BROADWAY, DEPT. 97, NEW YORK.



THE SPRAMOTOR is a machine designed for the application of all kinds of spray mixtures and paints, being operated by Engine, Horse or Man Power. The illustrations show the Hand Power Machine that was awarded First Place in the Canadian Government Contest, and the Gasoline Power Outfit as operated by the Dominion Government Fruit Division this year, to demonstrate to the growers the best way to raise a profitable crop of Fruit.

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IMPROVE your Fruit crop over 80%.

DESTROY wild mustard in the growing grain and not damage the grain, at a cost of 80 cents per acre.

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