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JULY, 1890.

The Canadian Horticulturist.

A Journal Devoted to Fruits Flowers and Forestry

EDITED BY L. WOOLVERTON, M.A.

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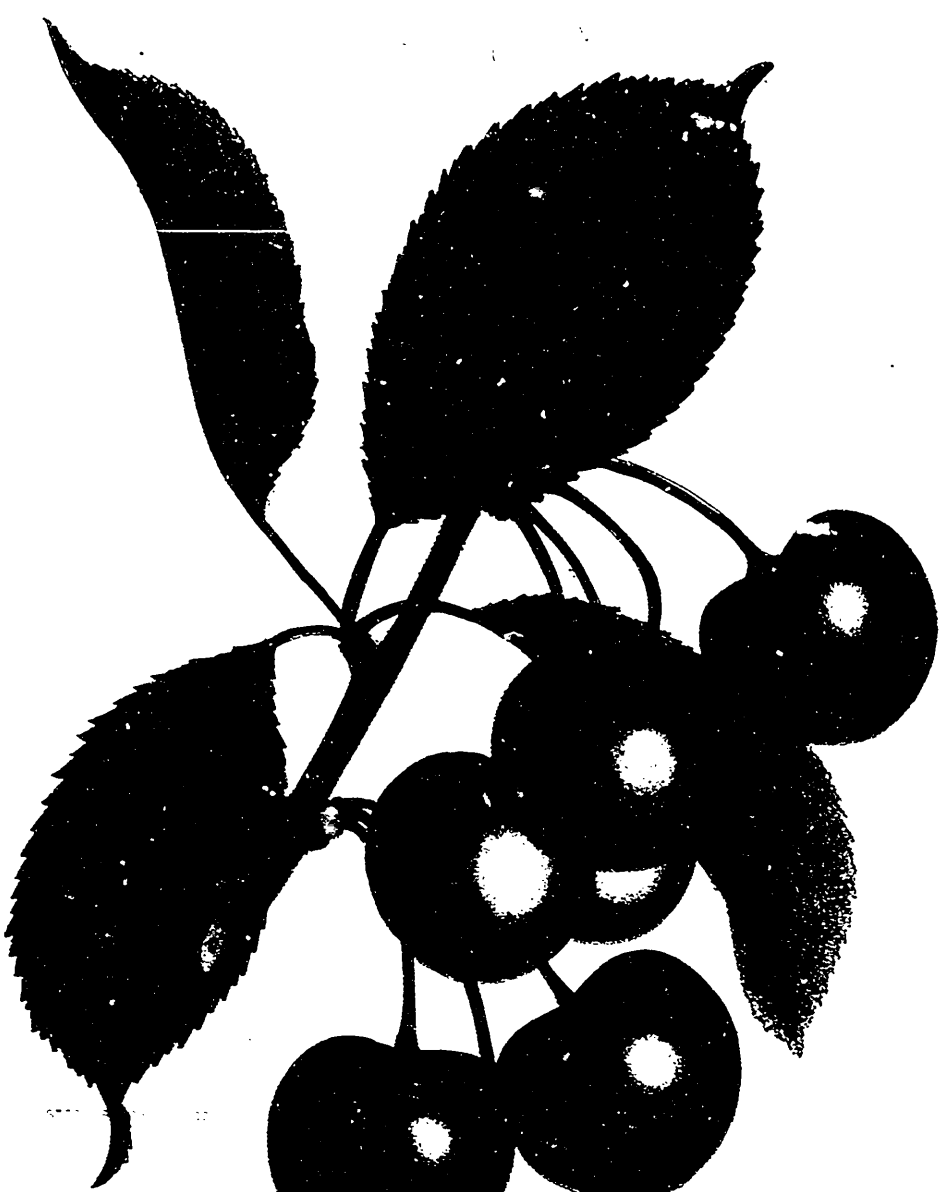

GOVERNOR WOOD

THE

Canadian Horticulturist.

VOL. XIII. 1890. No. 7

THE GOVERNOR WOOD CHERRY.

HOW delicious to the taste of the thirsty farmer, wearied with toiling in the hot sun, is the refreshing juice of the ripe cherry, and how kindly has the great Creator provided an ample succession of such delicacies for the benefit of His creatures, each to ripen in the season when it is most acceptable.

For market purposes, no doubt it is wisest to plant some of the many excellent acid cherries of the Morello type which are so much surer of a crop than are the Heart and the Biggarreaus, yet, in sections where they are found to be hardy, as in southern Ontario, there is money in growing these latter for profit. At Maplehurst the cherry crop is looked upon as one of considerable importance, indeed there is no doubt that it pays as well, acre for acre, as the strawberry, and there is little labor except with the picking; and even this is less than that required for gathering berries to the same value. Of course the curculio has always been a nuisance to the cherry grower, but since the use of Paris green has been found to be so effective in destroying it, the crop can be grown quite free from its ugly larva.

One of the best of the sweet cherries, of the Heart class, we consider is

the Governor Wood, of which an excellent representation is given in our colored plate. Preceded in our orchard only by the Early Purple, this excellent cherry ripens about the middle of June and continues in use until the end of the month. It always commands the highest price in the market, seldom going for less than ten cents a quart.

This cherry is a native of Ohio, having been raised by Prof. Kirtland, and is one of his best seedlings. The fruit is thus described by Downing:—Large, roundish heart-shaped, skin light yellow shaded and marbled with bright red. Suture half round. Stem an inch and a half long, in a broad cavity. Flesh nearly tender, juicy, sweet and delicious. Very good to best.

SEASONABLE HINTS.

PRUNING THE RASPBERRY.

A MEMBER of the Missouri Horticultural Society says that as a result of twenty years' experience he prunes the fresh raspberry plants when only ten inches high by pinching out the leading bud, and this checks the upward growth and induces laterals. Low stocky plants are thus produced which will not blow down afterwards. The stocks are again pruned when about two feet high, which is easily and rapidly done with a sharp pruning knife.

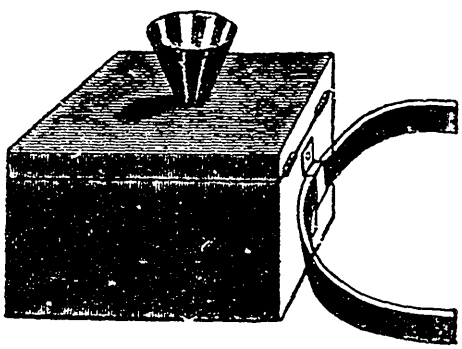

FIG. 49.—BASKET HOLDER.

We consider this good advice. We have found it to be injurious to the plants to allow the canes to make a long growth and then to cut them back severely late in the season. The result of such treatment is, that the canes will die back a few inches and very little side growth will take place; and this is worse than not cutting them back at all.

A BASKET HOLDER.

The handling of the quart basket in picking is one of the most awkward parts of the picker's work, especially in the raspberry plantation, where it is inconvenient to place it on the ground on account of stooping to place the berries in it, and, if carried, one hand only is free for picking. Some pickers attach a pail or basket to their belt in front, and in this set the basket, thus having both hands free for picking. Of course much more

work can be accomplished in this way. In Wisconsin an arrangement for the purpose has been devised which is shown in fig. 49, and is thus described :—

"A little device that interested me was a picking box or form into which the berry box was placed while being filled with blackberries or raspberries by the picker. The box was made of tin of a suitable size to receive the quart box. The box has a hinged cover, with a funnel shaped hole through which the fruit is dropped into the berry box within. There is a slot on one side for the strap which goes around the picker's waist. This box prevents loss in picking berries, being held by a strap, both hands are left free to gather the fruit."

MARKETING BERRIES.

It is strange that many of our fruit growers have so little regard to the kind of package in which they ship their fruit and to the manner of putting it up.

A great deal of good fruit is plundered in transit from the grower to the consignee, on account of badly made packages, which, in the attempt to give plenty of ventilation, also give opportunity, for theft. At the railway station at Caledonia we observed, the other day, a large consignment of strawberries being transferred from one line to another *en route* for Hamilton. They lay on the trucks on the platform for about an hour, during which time groups of boys were freely helping themselves to the contents through the openings for ventilation, and the officials seemed to pass it by unnoticed. It is hardly fair to growers to be blamed by consignees for short measure, which is often the result of pilfering such as is here described. Our Association should give the railway and express companies no rest until these abuses are remedied. We will discuss them at our annual gatherings, we will wait upon the companies in committee and expose them in the public press, until satisfaction is guaranteed to us.

Our American friends use pint baskets for blackcaps, and half pints and even third pints for the red raspberries, as they say that anything larger makes too much bulk, and the fruit is mashed by its own weight. No doubt there is an advantage in this, both to the grower and the consumer; but we look to the question of profit, and unless the smaller packages will sell for a proportionately higher price, it will not pay us. Mr. Varney, of Erie Co., N.Y., says his red raspberries sold at from 6c to 8c. a pint last season, and Shaffer's Colossal for 5c. a pint. We would suggest a general experiment with pint baskets for raspberries for this season, and shall be glad to publish the experience of our readers.

CURRANTS.

Currants like all other fruits should be gathered only when dry, and all bruised fruit should be carefully thrown out. Pickers need to be carefully

instructed, not to take hold of the fruit itself, but to handle them by the stems only. They may be shipped in baskets or in crates, but if the former is used, the ten-pound veneer grape basket is preferable to one of the larger size. For fine samples, such as we usually have of the Cherry or the Fay, it pays to pack in the 24-qt. crate. Currants should be sold by the pound, as indeed most fruits should be, but, so far in Canada, it is only the grape that is marketed in that way.

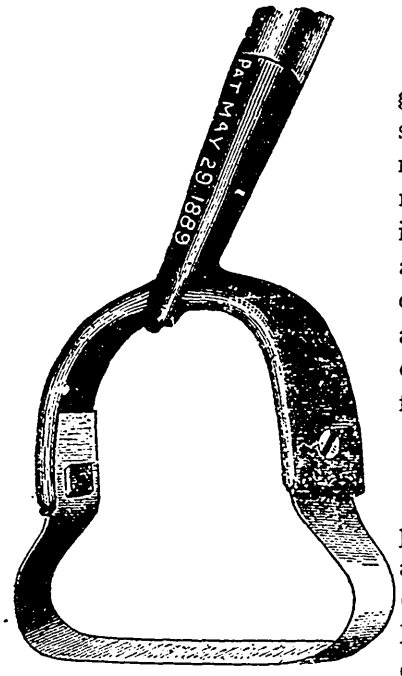

FIG. 50.—SCUFFLE HOE.

A GOOD SCUFFLE HOE.

We have been trying in our vegetable garden a new scuffle hoe, which is represented in our engraving, and find it to be a really useful tool. The gardener says he has not used one which he likes as well for working among little stuff. It can be used around and under the leaves of plants without danger of cutting them, and as soon as the plants appear it can be used so close to them as to cut every weed and yet not injure the small fibrous roots.

TIDY FRUIT PACKAGES.

The great importance of a neat fancy package in the sale of fruits is not yet by any means fully understood by our growers. Great improvements have been made in the last few years, and especially since, by the establishment of so many basket factories, baskets are made so cheap that they can be sold with the fruit. At one time the ugly wooden crate, dingy with age and containing baskets marked with the juice of the previous season's crop and musty with decayed fruit, was used quite commonly by Canadian fruit growers; but, happily, since the days of basket factories and cheap gift packages, this state of things has disappeared. Still there is room for improvement, and he who would attain the highest success must keep abreast of the times, even in matters of detail.

Careful handling by the pickers saves much labor in preparing the strawberry for market, because it is quite possible to have them trained to keep the grade of uniform excellence, throwing out all under sized fruit or placing it in a separate basket.

Crates holding sixteen or twenty-four quarts are the most convenient size and seem to take best in the market, as the quantity is just about what is needed in a family for preserving. The covers should fit closely to the fruit, and not leave room for it to move about in transit. A great deal of harm is done to

fruit in carrying it to the station by rapid driving over stoney roads, for which the railway company or express agent often gets blame which is the fault of the shipper. In England it is customary for the driver of a load, even of grain, to drive his team no faster than a walking gait. Here, with a load of perishable fruit, the driver rides and drives his horses at a furious rate to the station, never seeming either to consider the health of his team or the injury he is doing to his fruit.

In another point we are very careless, and that is the notifying of the consignee in advance of the quantity being shipped. This is a grave mistake, for very often when a man's fruit becomes known in the market it may be all sold in advance, on the advice being received.

We also err in not giving more prominence to the variety shipped. One kind of strawberry, or raspberry, is enough to put in a crate; and by branding the name on the outside of the cover, we shall gradually accustom our buyers to the merits of each sort, and thus get prices to correspond.

The crate described above is useful for several fruits, as blackberries, choice currants, gooseberries, and sometimes cherries, small pears and plums.

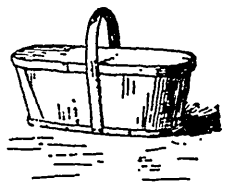

FIG. 51.—TEN-POUND BASKET.

For choice apples, pears, peaches, etc., we have been in the habit of using at Maplehurst the twelve-quart peach basket, holding about fifteen pounds, but for anything extra choice we have been using of late the ten pound grape basket, shown in fig. 51 with good results. For raspberries it is wise to use a pint basket, in order to keep the fruit from mashing by its own weight.

The half-barrel is a very good package for pears and extra selected apples, but of late we notice that the New York state growers are using a seven-eighths keg, which they claim pays better for the highest grade of pears.

A little art in all this work will pay. Fancy edgings of colored paper about the fruit are helpful, but the difficulty is to know just where to get it when it is most needed.

Stencils for addressing the package may be easily procured, but if no place is accessible where the work is done as a business, almost any tinsmith can cut out what is needed. Perhaps the neatest kind of a stamp for the variety of fruit, and the names of consignor and consignee is the rubber one which can now be had so cheaply in our cities.

Our business is yearly meeting with more rivalry, and it becomes us to take every advantage open to us, if we would not be left behind.

PROSPECTS FOR APPLES AND PEARS.

AFTER the prodigious show of bloom which was reported in our last number, and the consequent exalted hopes in which, as fruit-growers, we were beginning to indulge, it is all the harder to bear a reverse, and make up our minds to harvest without complaint a very scanty crop of our great staple fruits—the apple and the pear. But every day this state of things becomes more and more manifest; and the old saying is being verified with regard to a light crop following an over-abundant bloom. A mile's walk through the orchard at Maplehurst has given the writer a "fit of the blues," so far as these fruits are concerned. APPLES, except some varieties, will be a great failure. A large amount of the bloom was blighted, and so failed to set; but that only thinned out the fruit and there was enough to give us a good crop until about the twentieth of this month (June) when a leaf blight came upon the orchards, especially upon the Baldwins, Greenings, Kings and Gravensteins, causing a large proportion of the leaves to drop, and now the fruit is rapidly dropping also. The Baldwin suffered similarly last season, but is worse this year, so that there will be scarcely any fruit of this staple kind. The only apple, which is holding its grip firmly to the trees is the Northern Spy; it is very little touched with the blight, and has a fine show of fruit.

PEARS will also be a light crop, especially the Duchess, which has been so largely planted. The trees were a perfect mass of bloom, but no fruit was set. The Bartlett is better, having set enough to give us a fair crop. Clapp's Favorite is fairly well loaded, and so is the Rostiezer (a summer pear of excellent quality).

Not only have we to bear a short crop of apples and pears, but another and a very formidable difficulty for us to face is the apple scab, a fungus which is world-wide in its ravages, but, owing to the favorable season for its development, is this season more destructive to our fruit crops in Ontario than ever before. It is now (June 26th) showing itself on almost every variety of apple, but worst upon the Early Harvest, Greening, Spy and Snow, of which a great part of the fruit will be worthless in consequence. It is also attacking the pears. The Flemish Beauty in most sections is utterly ruined by it; every specimen being black and twisted out of shape. The Bartlett is much affected, but as the diseased fruits are mostly dropping, we may hope for a fair crop of first-class Bartletts.

This state of affairs seems to be widespread. Reports from all Southern Ontario, and Central New York State, all seem to agree in the sad story of blight and scab, while farther north the crop prospects seem brighter.

The following selections from our correspondents in various parts of Ontario will support the above statements:

ESSEX.

SIR,—Judging from our own orchards and reports from others in our locality, I think we will have half a crop of pears and about the same of apples. A few varieties of the former are spotting up some. Plums, from present prospects, are going to give a full load.

Windsor, June 24, 1890. N. J. CLINTON.

MIDDLESEX, OXFORD, BRANT.

Since the announcement that the apple crop had been blighted in some western Counties in Ontario, attention has been directed to the verification of the report, and inquiries concerning a number of orchards in Middlesex, Oxford, Brant, etc., elicited the fact that the injury to the crop is very general. At most, there cannot be half a crop, and probably less. The pear, plum and other fruits have not suffered to the same extent.—*Toronto Globe.*

WENTWORTH.

SIR,—Present prospect for apples about as follows:—Spy, Baldwin, Snow, Colvert. have set well. Gold Russ, King of T. and Greening although full of bloom have not done well—will not give a tenth of a crop—indeed, I think the few that have set will fall on account of the blighted appearance of the leaves. Pears of all kinds a very short crop.

Burlington, June 24, 1890. O. T. SPRINGER.

SIR,—Your favor to hand. I think from a rather superficial observation that both apples and pears are very light. I have been over for a few days in Western New York and the same is reported there. I saw one very fine Duchess Pear Orchard, with scarcely a Pear on it, at Lockport.

Winona, June 23, 1890. E. D. SMITH.

NORFOLK.

SIR,—The apple and pear crop prospect has very materially changed within the last three weeks. The apples have mostly fallen off, and what are remaining on the trees will be badly affected with spots. The pear trees are very seriously troubled with Fire-Blight and Fungus, which will comparatively ruin the crop.

Waterford, June 15, 1890. J. R. McMICHAEL.

PERTH.

SIR,—Pears are not promising so well; many trees that were loaded with blossoms have not a sign of fruit upon them now. The Flemish Beauty only promises a full crop, other varieties having to a large extent blighted and dropped off.

Mitchell. T. H. RACE.

PRINCE EDWARD.

SIR,—The apple prospect is very far from promising. We could not wish for a more abundant bloom, but we had almost a continuation of showers while they were in blossom: the result is a very poor set upon some varieties. The Duchess, Trenton and Ben Davis, and most of such product varieties look well. The spot has already made its appearance, and is likely to be much more destructive than ever; there will not be one-fourth of an average crop.

Pears have shared the same fate as the apples, there being a very bad catch. There are more Flemish Beauties grown here than all other varieties put together, and it is now

almost impossible to find a specimen that is not covered all over with rust. Judging from present appearances there will not be more than ten per cent. of an average crop.

Trenton, June 19, 1890. P. C. DEMPSEY.

FRONTENAC.

SIR,—The prospect at present is that the apple crop will be very abundant. All kinds that can be grown here seem to be bearing this year. Not many pears grown here, but what trees there are promise a good crop.

Cataraqui. D. NICOL.

CARLETON.

SIR,—The prospect of apples is fair to good. There are no regular set out orchards here, as the cultivation of the trees is very precarious. Many people have a few trees set round their houses, but few apples are grown for commercial purposes, they are generally raised by individuals for home use. Of pears none are grown.

Ottawa. P. E. BUCKE.

SIMCOE.

SIR,—In reply to yours: The prospects for apples and pears are very good. Pears are grown here only to a very limited extent. But those who have a few trees are likely to have a fair crop of fruit. Apples are likely to be far better than an average crop. The Duchess especially are setting an enormous crop. Plums are likely to be very good, up to the average—that is the good varieties, while the common red ones are almost a failure.

Cherries are not very extensively cultivated here, as the Early Richmond is the only variety that seems to succeed with us. Those are well loaded with fruit. But most of the trees are injured by "black knot."

Judging from my own plantation Raspberries are likely to be better than an average. Mine are looking better than they have for several years.

Grapes are very backward this year and, although covered during winter, seem to have sustained a considerable damage from the frequent changes of temperature.

Gooseberries and currants are good and will be a good crop; and what few plants are left of the Strawberries are looking well, so that taking all things together the fruit prospects are very good.

Craighurst, June 19, 1890. G. C. CASTON.

MR. W. FISHER, of Orillia, says that the fruit prospect is good. Black Currants promise an immense yield. The Gooseberry worm is destructive, and owing to the wet weather it is difficult to destroy the pest. His Strawberries—Sharpless and Crescent—wintered well, and are blossoming famously. The Lombard Plum, after two good seasons, again promises a fair yield. The good old Duchess of Oldenburg apple trees are covered with blossoms again. The blossoms on fruit trees came out and disappeared very rapidly, but the fruit was formed. The growth has been amazing—fully a foot of new timber already having formed on the horse chestnut trees.

GIRDLING THE VINE.

KNOWING that Dr. Fisher was one of the strongest objectors to girdling, I suggested that experiments be made by him, he to furnish fruit from his own vineyard of his own selection. Last year the arrangement was made. He took one row fifteen to twenty feet long.

Dr. Fisher was asked to girdle one arm of each vine leaving the other in natural condition. The Committee of the Horticultural Society visited Dr. Fisher's vineyard the last week in August. It was curious to look at the row; on the girdled half the grapes were in a fit condition to pick for market. The single grapes were as large as the Hamburgs in my cold grapery. The others were just beginning to turn; the Dr., on the 25th of September, picked and sent the first lot to Dr. Goessmann; on the first day of October he selected specimens from each vine, and sent them for analysis.

The two important elements in the Grape are sugar and water. In the girdled vines the portion of water was seventy-six and a fraction per cent. In the ungirdled vines it is eighty-one and a fraction per cent. In the girdled there was seven and a fraction per cent. of sugar and in the ungirdled six and a fraction of sugar. The girdled fruit thus surpassing in both respects. Dr. Fisher said to me: "I was never more disappointed in all my life, although I had given it more attention than ever before, and I had become certain before the analysis that there was more sugar in the girdled fruit; there was more sweetness in its taste."

Now, if this is a fact—if it does not injure the fruit, and it ripens from one to two weeks earlier and increases its size from one-third to one-half, it is certainly worth considering. In taking the later varieties and ripening them a fortnight earlier it gives us more scope, and it is so easily done, it is done in a moment, girdling the vines below the lowest fruit bud. If there are a half dozen bunches—one-quarter of an inch below the lowest fruit bud, girdling on July 15th perhaps. Mr. Wheeler says any time after the fruit gets to be the size of buckshot. He has done it for ten years without any perceptible injury; still it is a question whether in the end it will not seriously affect the vigor of the vines.—*From paper read by F. J. Kinney before the Boston Farmers' Meeting.*

THINNING FRUIT.

THE horticulturist of the Missouri Experiment station has made some analyses of apples during the different periods of their growth, which show that much of the greater proportion of the ash is stored up in the early part of the growth of the fruit. This is urged as an additional reason for thinning as soon as the wormy and imperfect specimens of the fruit can be distinguished. A barrel of large and perfect apples takes a smaller amount of mineral plant food from the soil than a barrel of small inferior fruit. The apples on an acre of ground where the trees stand thirty feet apart and yield ten bushels of fruit to the tree, take from the soil

more than forty-three pounds of potash. This suggests the use of ashes, or of the potash salts, as a dressing for orchards.

In reply to an inquiry concerning the distance at which fruit should be allowed to remain, the editor of the *Country Gentleman* says:—the distance will vary with the size of varieties, and with the intended uses of the crops; but as a general or approximate rule, large peaches should be four or five inches apart on the bearing branches, and small or early ones three or four inches; pears should be at quite as great distances, with more variation for differences in size, for while such diminutive pears as the Summer Doyenne need not be more than two or three inches apart, the Angouleme should be at least six inches. Plums may be rather less than peaches, but the necessity of thinning is even more urgent, to save from rotting. Any orchardist may have observed the improved quality, as well as size, in apples with a moderate crop, and should thin accordingly. It should not be forgotten or overlooked that fruit properly thinned is so much improved in quality, as well as size, that no loss in the magnitude of the crop occurs, and a positive gain in quality and price is secured by thinning.

TRADE IN CHOPPED APPLES.

IT is stated that the export trade in chopped apples—a dried product from inferior fruit and material left after the preparation of the best quality of evaporated fruit—had increased from small orders in 1880 to 11,000,000 pounds in 1888, and 20,000,000 pounds could have been sold in 1889. Cider is consumed in France at the rate of 276,000,000 gallons annually. American chopped apples are largely used for conversion into cider, and preferred to the home-grown article, being better preserved and of finer flavor. It appears now that there is room for all we will be able to export.

TASMANIAN APPLES.

ON April 28th, 2,400 cases of these were sold in Covent Garden Market. They consisted chiefly of Ribstons, Cox's Orange Pippin, Scarlet Nonpareil and King Pippin, other kinds, including Sturmer Pippin, Blenheim Orange, Prince Albert and Crow's Egg, also several cases of Pears. There can be no doubt that in the near future these Australian apples will take a very important place among foreign fruit imports. It cannot well be otherwise, for they have no competitors worth speaking of, our own apple season being practically at an end by the time they are due. They have but one fault, and that is a want of that crispness that distinguishes good fruit of home growth. But they have what is perhaps more

in their favor—a fine appearance, and it will be a long time before the inhabitants of large towns learn to buy fruit for its flavor alone. Color and size are indispensable to make any fruit sell well in the London markets, and these points are just what the Tasmanian apples are strong in. Probably in a few years Tasmanian apples will be as plentiful with us as American apples are now, although it must be borne in mind that the cost of transport is much more, not only by reason of a longer sea voyage, but also because the deterioration of the fruit on the journey must be guarded against by means of specially constructed cool chambers. The rapid growth of this trade shows, however, that the profits are sufficiently large to warrant this extra expense, and we may now regard Australian apples as forming an important item in the supply of our fruit markets.

Home growers, contrary to what is usually the case when a new source of supply is opened, may regard the probable great extension of the Australian apple trade with indifference, as they have time to dispose of their own produce before the foreign fruit comes to hand. Whether the importation in bulk of good apples during the spring months is likely to affect the value of home-grown forced fruits of various kinds is another matter, but it is evident that the apple is as much appreciated at this time of year as in the winter.—*The Garden.*

HARDINESS OF THE PRINCESS LOUISE.

IN the May number of the HORTICULTURIST, page 155, L. Pasche asks a question in reference to the above. It might be partially answered by one year's experience of its growth in Muskoka. The Princess Louise apple was one of the trees and plants distributed by the Fruit Growers' Association to its members for 1889. I selected it, and received it by mail as usual in good time for early spring planting. With it I planted two larger trees of the same apple, bought from a nurseryman. The trees grew well. To-day, on looking to see how they had passed through the winter, I found all three looking healthy and showing signs of growth, even to the top buds of every young branch.

Cape Elizabeth, Muskoka, Ont. F. W. COATE.

GROWING PLUMS IN THE COLD REGIONS.

AT some of the meetings of our Association the novel mode of protecting plum trees from the destructive influences of the cold which has been employed in New Brunswick has been referred to and partially described. It is, therefore, interesting to notice in a late number of the

Farmers' Advocate, an article by Mr. Robert Hamilton, of Grenville, P.Q., in which he fully describes this method, using the accompanying sketch as an illustration thereof. It is Mr. Sharp, a fruit grower of Woodstock, N.B., who has been employing this method on a large scale with entire success, even with some of the finer varieties. The tree shown at *a* in the illustration has been trained for the purpose of laying down by allowing the roots to grow in such directions as will not interfere with it. "The trees," to use Mr. Hamilton's own words, "are bent southwards, and the roots, to allow of this, are directed to the east and west—any large roots on the north and south sides are removed. In the Fall all that is necessary to do is to take a spadeful or two of earth from the south side and gently bend the tree down and fasten it there. This may be done by weighting or,

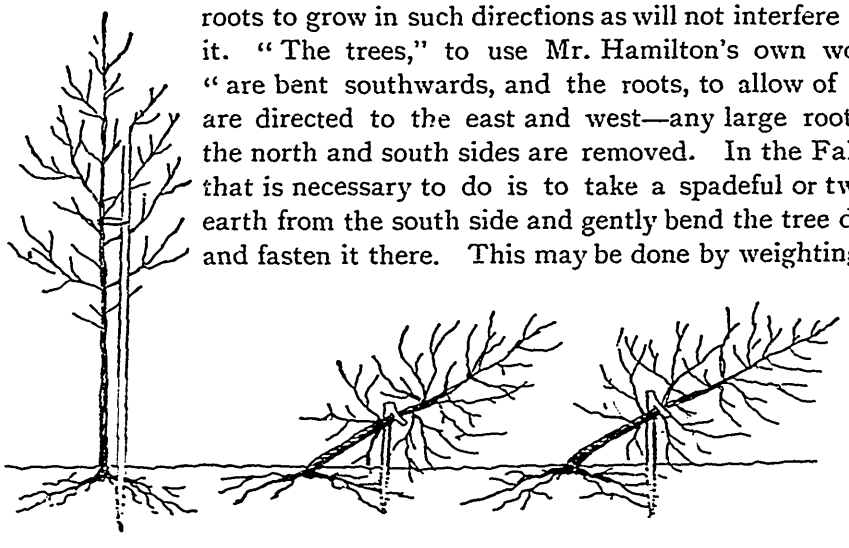

FIG. 52.—THE POSITION OF MR. SHARPE'S TREES IN SUMMER AND WINTER.

better still, by means of a strong crotched stick driven well into the ground. A plum orchard treated in this manner, where, as in Mr. Sharpe's, the trees are planted rather closely, has the appearance of a brush pile in the Fall. The trees, laid almost flat upon the ground (Figs. *b* and *c*), gather the snow and retain it, but from the branches lying with their length parallel to the ground they are not broken, and being perfectly sheltered by the snow their fruit buds remain uninjured, and an abundant crop is the result. And this fruitfulness is not wholly due to the protection given to the fruit buds by the sheltering snow, but in part to the check that is given to the wood growth by the bending down and retaining the trees in their recumbent position till after blossoming. Instead of a vigorous wood growth numerous fruit buds are produced; these, duly protected, are in turn followed by the fruit.

The trees treated in this manner are, after blossoming, raised up and fastened to strong stakes driven into the ground beside the trees for that purpose.

As far as appears at present there are no special varieties that are better adapted to this treatment than others. All the sorts that are grown in the most favored regions of our country submit to this treatment and thrive

under it, and when the trees become so large as to be unmanageable they may be permanently fastened down. Although only plums have been tried in this way, there is no reason to suppose that cherries and pears may not be made amenable under such treatment.

PLAIN HINTS ON FRUIT GROWING—III.

TREE AND PLANT FOOD.

THE importance of understanding something of how trees and plants are fed from the ground becomes apparent as we engage in the work of fruit-growing and gardening. We soon see the value of plenty of fibrous roots on the trees we set in the ground, by the appearance of the foliage and growth of those that have, compared with those that have not, such fibres; and when we take into account what has been hinted on before in these papers, respecting the *balance* between root and top of a tree, as we are setting it in the ground, we can estimate pretty correctly how much top to leave on the trunk of the tree. Many trees come from the hands of the nurserymen to the purchasers with long full tops, with correspondingly long bare tap roots, and many inexperienced purchasers, who desire to see a fine top on their trees at the outset, put them in the ground without pruning back either top or root, and then wonder why their trees do not succeed better. There is little chance for a tree to feed from a bare tap root. It is the fine fibrous roots on the main ones that suck from the ground the nourishment the tree needs for vitality and growth. If a tree comes to hand with few fibrous roots, cut back the top, leaving three or four main branches, and these cut short, if you would expect to succeed with your tree. Become acquainted and familiar with the wants of your young trees, and you can treat them with the same interest that you would young live stock of any kind. Your tree has a *life* to sustain and nourish, and you cannot expect it to grow thrifty if you carelessly put it in the ground, as many do, without regard to its condition and wants, and leave it to care for itself. Pruning back the branches and long tap roots tends to force out fibrous roots; and here nurserymen can profit by a hint, if they will, by pruning down the tops of their two and three year old trees, to force out fibrous roots on their main roots, prior to their transplanting at four years old. If young trees are allowed to grow long and few branches, it will be found that their roots are long and bare of fibrous roots as a rule. Correspondingly, if the tops are kept short and bushy, the roots will be more fibrous, and recover transplanting more successfully. I feel the importance of placing stress upon this point, as many would-be fruit growers lose heart

because their trees die for lack of these precautions in the outset. Three years ago I signed an order from an agent travelling for a certain firm for thirteen four-year-old apple trees and 100 yearlings from the graft. I made the agent promise to make good any failures of the four-year-olds. When they came to hand I knew three of them would fail as soon as I saw them. They each had two or three bare tap roots, nothing on them to take up food for the tops. I cut them back well, set them in a moist rich soil, and they put out a few leaves on each, but died before the summer was half past. The yearlings all did well but two. The balance of the four-year-olds had passably good roots and are all doing well, and I have given them no special protection except the long manure mound, to keep back too early flow of sap in the Spring. The agent made good the failures, and I mention this to present the value of stipulating with agents to make up for failures, which they ought to do, providing you act well your part in caring for the tree. I am giving experience from an unfavorable locality for fruit-growing, on a piece of flat elm and cedar land, within three miles from the city of Ottawa, where the fruit-growing has a long winter to contend with and special difficulties to meet. I am testing in a small way, and without great outlay, apples, pears, plums, cherries, apricots, grapes and all the other small fruits, hence, if I succeed, it will be from the application of such care and knowledge as any one can acquire who really has a taste and determination to grow fruit.

Many think that none but gentlemen with means abundant should engage in fruit-growing. This is a great mistake. If you possess a quarter of an acre of tillable land or more, you will be surprised how much delightful and profitable pastime and experience you can enjoy upon it. And as we are speaking about the means by which trees and plants are fed, we may say a word about the kind of food they ought to have. They ought to have rich nourishing food, but not *too* rich. That is, don't throw raw manure into the roots when you are setting out your trees. Give them rich friable loam, if you can get it, especially if your land is on the poor order. While setting your trees, shrubs or plants in the ground, have the thought uppermost in your mind how they are to *feed*, and this will prompt you to do many little things that nobody has ever told you to do. The interest you take will be an incentive to invention, just as a caterer to the public taste does many things peculiar to himself.

In setting out strawberries, don't set them in with a plunge of the spade or trowel, leaving the roots pressed together in a mass, as some do, but take the crown of the plant between the thumb and forefinger of the left hand, and after stirring up the ground well with your trowel, spread the roots well with the three fingers of the left hand, make a narrow opening with the right hand in the loose dirt near your line, place the roots of your plant well spread into the opening, and press the dirt firmly down to the bottom of the

roots on each side, taking care to set low enough to bring the crown of the plant even with the top of the ground, but *never cover the crown*, or your plant may smother. This mode of setting will allow your plant to commence feeding early and soon make progress in growth. Keep the runners and any blossoms cut off until July, if you set in the Spring; if you cultivate in the matted row, train what runners which may grow later in the season around lengthwise with the row; but if you prefer the hill system, keep the runners cut back the Summer through, that the main roots may firm up for next season's growth. For the matted row, which is the most profitable for field culture, rows should be three feet apart, with plants set one foot apart in the row. This will allow a cultivator to run between the rows, thus saving hoe labor. If your plot is small, rows two feet apart and eighteen inches apart in the row for the hill system is preferable, to cultivate with a hoe; this gives you larger berries, and, as a rule, better quality, as they will be more exposed to the sun's heat, which gives a fine flavor.

Nepean, Ont. L. FOOTE.

TREATMENT OF APPLE SCAB.

RECENT experiments indicate that apple scab (*Fusicladium dendriticum*, Fckl.) may be almost entirely prevented by the application of certain liquid preparations, in the form of a spray, that, while harmless to the foliage and fruit of the tree, are destructive to the fungus which causes the disease. Various substances have been found to be more or less beneficial, but at the present state of our knowledge, a *solution of copper carbonate in ammonia* largely diluted with water is to be most strongly recommended. Experiments conducted, the past season, in the orchard of Mr. A. L. Hatch, of Ithaca, Wis., with this preparation proved so far satisfactory that Mr. Hatch has decided to apply the treatment to his entire orchard of about twenty-five acres the coming season, as a means of increasing the income from his apple trees.

DIRECTIONS FOR PREPARING AND APPLYING THIS FUNGICIDE.

The copper carbonate and the ammonia may be procured through almost any retail druggist. As the former is not always kept in stock, it would be well to order it some days before it is desired for use. The copper carbonate should be of the "precipitate" form, and is worth at retail about sixty-five cents per pound. The ammonia should be of a strength of 22° Baumé, and should be procured in a glass or earthen vessel and kept tightly corked, preferably with a rubber cork.

Four ounces of the copper carbonate and one gallon of ammonia will be sufficient to give about fifty large or seventy-five medium-sized trees one

thorough spraying. As four or five treatments will be needed for a thorough application of the remedy, the amount of the materials required for any given orchard may be readily computed.

The best formula that can be given in the present state of our knowledge is to dissolve one ounce of the copper carbonate in one quart of ammonia, and dilute this, when ready to commence the application, with twenty-five gallons of water.

WHEN TO MAKE THE APPLICATIONS.

In the experiments made the past season in Mr. Hatch's orchard the first application was made after the petals of the flowers had fallen, and when the young apples were slightly larger than peas. But it is the opinion of Mr. Hatch and myself that one spraying before the flowers had opened would have proved beneficial. I would recommend, therefore, one treatment just before the flowers open, a second after the petals have entirely fallen, and others at intervals of two or three weeks until midsummer, or after, if the latter part of Summer should be wet.

APPARATUS FOR SPRAYING.

For applying the liquid to the trees, a force-pump, to which is attached a few feet of hose, fitted at the end with a spraying nozzle, will be needed. Excellent pumps are now made by the larger manufacturers expressly for spraying purposes, fitted with all necessary attachments, and costing $10 and upwards. Smaller pumps, which would answer fairly well for a few trees, may be had at from $2 to $10 each.

The same pump which is used for treating the trees for the apple scab may, of course, be used for applying poisons for the codling moth and other insects. Unfortunately it will not be prudent to add the copper carbonate solution to the same water that is used in applying Paris green or London purple, as the ammonia renders the arsenic more or less soluble, and thus the latter would be liable to injure the foliage. But if applied a few hours in advance of the water containing the arsenites, no harm can result from this source.

SUGGESTIONS FOR FURTHER EXPERIMENTS.

The time at which the applications should commence, the number that should be made and the amount of copper carbonate to be used to accomplish the greatest benefit at the least cost, remain to be settled by experiment.

The most practical remedy for the apple scab must be one that may be applied in the same water with Paris green or London purple without thereby endangering the foliage. It is the opinion of our station chemist, Dr. Babcock, that not only the ammoniacal copper carbonate, but the sodium

hyposulphite and the sulphides of lime and potash, all tend to render the arsenic of Paris green and London purple soluble, and hence can not be wisely used in connection with these poisons. The copper carbonate, however, which in the ammoniacal solution is the beneficial agent in preventing the apple scab, does not have this effect when used without the ammonia. The question therefore arises, Is the ammonia solvent necessary?

I have recently made some tests with a sample of commercial precipitated copper carbonate, and find that its state of division is such that it remains suspended in water rather better than Paris green, and so may be applied by any apparatus that successfully distributes the latter. It apparently adheres to the foliage nearly or quite as well, when applied in simple suspension, as in the diluted ammoniacal solution.

I recommend, therefore, that those who spray their apple trees for the prevention of injury from the codling moth, make the experiment in a portion of the orchard of adding the precipitated copper carbonate to the water, at the rate of an ounce to twenty-five gallons. No harm to the foliage can result from this measure, while we have every reason to expect that much benefit will accrue in the prevention of the apple scab.

University of Wisconsin, Madison, Wis. E. S. GOFF.

NOTES ON NEW FRUITS.

HUBBARDSTON'S Nonsuch seems steadily to be growing in favor as a valuable market apple. One party, having quite a large crop the past year of fine quality, sold them at nearly double the price of ordinary sorts.

The MILDING, which is one of the few new sorts sufficiently hardy enough to thrive in the extreme north, where the Baldwin winter-kills, seems fair to become one of our standard varieties of fine colored apples. It bears young with annual crops, fruit of good size, beautiful color and fine quality.

The LONGFIELD, a Russian variety recently introduced, commends itself on account of the tree being very hardy and very productive, while the fruit keeps well into March.

VERMONT BEAUTY PEAR. This exceedingly beautiful variety seems to be steadily growing in favor and evidently possesses many points of excellence. The tree is a strong stocky grower, good bearer and very hardy. This variety is highly commended by Dr. Hoskins, of Vermont.

HYNES' SURPRISE PEACH is a valuable early variety very hardy in fruit bud, productive and entirely a free stone, ripening immediately after Early Rivers.

HORTON RIVERS is believed to be the most valuable early peach yet brought into notice. It is a seedling of the Early Rivers. The original tree bore a few specimens in 1887, a larger number in 1888, and one and one-half bushels in 1889, the first of the fruit ripening in 1889 about August 15th. The flesh is white, solid and very juicy, very strongly resembling the Early Rivers in style and size, but is a perfect free stone. In foliage and hardiness of fruit bud, its parentage is marked.

The HARRIS APRICOT is attracting considerable attention on account of its hardiness and productiveness. It is a seedling which has now been fruited with uniform success for several years, resembling the Early Golden in habit and ripening, but of larger size. It ripens this last season on July 20th.

The ERIE BLACKBERRY has proven to excel everything in its line. One acre is known to have yielded 3,000 quarts.

BUBACH STRAWBERRY. A very vigorous variety, free from rust, very productive of large bright scarlet fruits. Soft; quality No. 1.

HAVERLAND. A fine variety, of distinct leafage, very light green, a strong grower, multiplies by runners very rapidly. Abundant bearer of very attractive fruits; berries all large with long neck, soft; quality No. 2.—*From the Proceedings of the Western New York Horticultural Society for 1890.*

STRAWBERRY SHORTCAKE.

TAKE one quart of sifted flour, pinch of salt, one large cup of sour cream, half teaspoonful of soda, mix and roll out like pastry, bake in two large cakes, take out of the oven, split them, make four halves, spread each half with butter, and place between a thick layer of strawberries and sugar, reserving the upper crust of one cake to cover the other three. Then place in the hot oven for five or ten minutes, and serve smoking hot.

CRYSTALLIZED FRUIT.

TAKE slices of orange or clusters of grapes, or any other fruit desired, and dip them first in white of egg beaten to a froth, and then in pulverized sugar. Lay a sheet of paper in a pan; spread the sugared fruit on it, set in a cool oven to dry, then keep in a cool place. It is quickly done, and is a pretty variety for the lunch table.

GRADING FRUIT.

THE proper grading of fruit has much to do with its selling and keeping qualities. The term grading, as generally used, is applied to size alone, but assorting as to color and ripeness is no less important. Much of the fruit found in our home markets is of the most indifferent sort and is packed in a slip-shod, go-as-you-please manner. One green or ill-shaped peach will detract from a whole box, no matter how fine the others may appear. One soft apricot packed iu a box intended to keep a few days may lose you the the profit upon the whole box. A green or soft strawberry in a basket when seen by a buyer will lead him to believe that there are others of the same sort further down in the basket.

True, it is some trouble to grade your fruit in this way and it requires skill and decision in the packer. It should be remembered, however, that we are in the business to make money and that trouble must be expected and competent help employed, if we are to hear the clink of gold in our pockets. If fruit is properly graded, facing is honest and legitimate; but only too often is it used as a cloak by which to filch a few cents from the unsuspecting public. In some of our markets you hardly dare buy a box of berries or fruit of any kind without first removing the top layer to see if the remainder is trash. This is plain talking to the "honest farmer," but it is true and the prevalence of this evil has many times curtailed the demand for fruit by disgusting the consumers and has brought disgrace upon fruit growers in general. There is but one way to pack fruit profitably and honorably, if your reputation is of any value whatever. Grade it; grade it carefully for size, color and ripeness. Every right-minded grower, packer and shipper should insist upon trio grading, and should stamp all fruit shipped as such, so that the purchaser may be certain of the quality of his purchase. In this way honest growers and packers can, in a measure, protect themselves and the public against those who are unscrupulous and careless in their methods.—*California Fruit Grower.*

BLIGHT IN PEAR TREES.

IN my correspondence in last September's HORTICULTURIST, I told you that blight had affected the pear trees rather badly. Little did I think then that it caused such destruction among them. I then thought that it took somewhere in the branches, and that if we were to cut it off some distance below the discoloration and apply linseed oil

to the cut, it might possibly save our trees; but alas! the disease I find is seated below that, and I don't think there is any remedy. The beginning of last month (April) I went and examined my trees, and I found quite a number totally black just where the large branches start from the stock, while the top seemed green and the buds swelling nicely.

The Flemish Beauty are most affected, I cut down seven large trees of this variety and about half of several others. I have two of Manning's Elizabeth dwarf trees dead, a branch of Souveni de Congress, also branches of a seedling, and small branches of the Bartlett.

The fruit of the Flemish Beauty and Manning's Elizabeth seemed to escape the severe frost last year the best of any, but the blight took in them the worst. In my opinion it was the frost of the nights of the 22nd and 28th of last May that caused this blight; before that we had very fine open weather. I find it a very great loss on the whole; last year almost all our fruit destroyed and now so many of our pear trees gone. I have trees with stocks from five to eight inches in diameter, with tops over twenty feet in diameter totally gone, and I don't doubt but a good many others will die.

The Vergennes Grape received last year got cut off as well as the others, but it sprouted again, and now I see it is looking pretty well, but small.

The fruit prospects for this year seem to be very good, the cherry, pear and plum are heavily loaded with blossom buds. Apples don't appear to be so thick on some varieties. We have had a very fine Spring, I hope our fruits will not suffer this season.

Goderich. WALTER HICK.

NOTE BY EDITOR.—This mysterious disease, the pear blight, was very destructive last season, especially on some varieties. The Duchess dwarf suffered exceedingly, and even the Bartlett lost much wood. This variety has one advantage over others however, in that it is usually affected in the branches and not in the trunk, and when cut back below the discoloration, will produce fresh growth and a new tree in a short time. The Flemish Beauty, the Osband's Summer and the Vicar act differently, and often blight in the trunk, and if much cultivated soon blight to death. At Maplehurst, Bartletts planted twenty-five years ago are still thrifty, but not a Flemish Beauty or Osband's Summer of that age, unless where grown in sod.

We do not think the frost caused the blight, for it is often quite severe without any such cause. Indeed it has been plainly shown by scientists that a small microscopic organism or microbe, which is far too small to be seen with the naked eye, is the real cause of this disease. These microbes are easily carried about in the atmosphere, and finding entrance through the stomata of the leaves into the juices of the tree, where they soon cause disease and death.

FERTILIZERS FOR FRUITS.

WRITERS in the rural press tell what little effects they have had from applications of bone dust or other plain phosphates in the orchard, vineyard or small fruit patch. This is very natural. All fruits and fruit crops require more potash than phosphoric acid, and even where they apparently are doing well, they will usually do still better when more potash is applied. For this reason, bone dust and the like *alone* are not what is wanted. Add plenty of unleached wood ashes, corn-cob ashes, cotton-seed hull ashes, muriate of potash, or kainit, and you will not be likely to complain of the ineffectiveness of the application. Let fruit growers understand this thoroughly. Simple phosphates are no manure for fruit crops, and never will be. Potash, on the other hand, in any of the forms named, cannot well be applied in too large doses for fruits. Lots of potash makes bush and tree fruits firmer, sweeter, better in flavor, renders the wood more resistent to wind and weather, and is a benefit to them generally, and this without a single drawback. Potash also improves the quality of potatoes, beets, turnips, etc.

This is now pretty generally recognized. The way that our leading fertilizer men put up their various brands for special crops is a pretty good indication of what they think about this subject. There is, for instance, Mr. Mapes' "Fruit and Vine" manure. An average of several analysis gives it 2·50 per cent. of nitrogen, 10·20 per cent. of phosphoric acid and 10·71 per cent. of potash. Evidently Mr. Mapes (and he is most excellent authority) thinks that potash is the most important of the plant foods in a fertilizer for fruits. The only crop for which he uses a still slightly larger percentage of potash is tobacco. The demands of this crop for potash are simply enormous and even ruinous. The soil in Virginia and elsewhere, impoverished by long cropping with tobacco, will not be restored to fertility by applications of simple phosphates. Potash alone can help them. For soils in this condition, let our Virginia friends try muriate of potash or kainit, or cotton-seed hull ashes, etc. Of course, barn-yard manure in large enough quantities will also have good effect.—*Joseph, in Farm and Fireside.*

THE HOUSE SPARROW.

I NOTICED recently, in a local paper, an extract from an Australian paper, condemning the English sparrow as a nuisance, and was to the effect that the insect pest there was increasing to an alarming extent, and the cause was attributed to the decrease of native insectivorous birds,

which had been driven away by the English sparrow. The same complaint has frequently been made in this country.

Now from my personal observation I am satisfied that this is an error, for I never saw a greater variety of birds in Toronto than there is this year, and there never were more sparrows, still the sparrow is at the root of the evil. It has been claimed by some that the sparrow is an insectivorous bird; this is not the case, excepting when raising their young. A close observer cannot but have noticed that, as soon as the first brood is hatched, the parent birds would be seen running along the house-eaves and such like places in search of spiders, with which they feed their young, and on nothing else, so long as the supply holds out. What is the consequence? There is to-day not a spider to be seen in the city of Toronto, that is accessible to the sparrow. Here is the whole secret why insects are increasing: their most deadly enemy, the spider, is being exterminated by the sparrow, and the whole host of insectivorous birds cannot do the work that the spider has been doing, silently fighting on our side, slaying its thousands and tens of thousands of our most troublesome insect enemies.

The sparrow must go, and with him the mercenary taxidermist—the latter, I am sorry to say, few towns are now without their quota—or the Horticulturist will have to give up in despair all attempts at fruit culture.

Toronto, Ont. J. NEWHALL.

COBEA SCANDENS.

LIKE many other of our cultivated floral plants, this one hails from Mexico, and has been known since Barnabas Cobo spent fifty years of his life as a Jesuit missionary in Mexico and Peru. He being also quite a naturalist, this interesting plant was named in his honor. At one time it was rarely met with out of conservatories, where it formed a strong growing climber, but it being found to be equally well as a summer climber out of doors, it has for a good many years now been used for that purpose. There is a variegated variety quite showy in its foliage, which can only be raised from cuttings, but the common kind can be raised both ways, cutting or seed, with equal facility. The general method, as much the most simple, is by seed, which if sown in the greenhouse on a hotbed early in the spring, gets good-sized plants by now or planting time. It is one of the most rampant growers under favorable auspices, hence can be used safely where a large space is designed to be covered. The flowers are large cups or campanulaceous in shape, and come freely all the summer long.

FIG. 53.

The seeds are of some size, thin and flat, and gardeners have found that they grow the most freely set on edge and covered with about one-fourth inch of soil. For present planting, however, it is better to purchase plants of some florist than to depend upon seed at this late season.

MAKING AN HERBARIUM.

A PLEASANT way for young people to improve themselves in botany during the summer vacation is to make an herbarium or a collection of pressed wild flowers. As it requires considerable skill and patience to dry these fragile blossoms of the woods and fields, the points to attend to

are to dry the specimens quickly, thoroughly and with a pressure that will not crush them. A good method is to place each specimen in a sheet of brown paper and interpose several empty sheets between each two of those filled. Then place them in the press—a napkin press if one has one; if not, a few heavy books may be used. Then press them gently for the first day or two—just enough to prevent the leaves and flowers from shrivelling. When the papers are quite damp, separate them and spread them on the floor of a room where they can dry a little. Return them to the press, increasing the weight. Repeat this daily until the flowers are quite dry. They can then be laid away or pasted into blank books, classified or numbered.

HOW TO PRESS FLOWERS.

A WRITER in *Gardening Illustrated* uses cotton-batting instead of bibulous paper in which to place fresh flowers for pressing. "I have had," he says, "much experience in flower drying, and I never found any kind of paper answer, however carefully used, and for the following reasons: First, the paper, of any kind—is, however lightly pressed, too hard a substance to touch the delicate bloom or surface of the petals of any flower, and at once injures the tender skin, causing the liquid to exude and saturate the leaf, which tends to decay it, as well as to injure or destroy the color. Secondly, paper does not absorb the natural moisture rapidly enough, but remains damp about the flower, thus allowing the air to pass through, while damp air injures both color and leaf. I have tried a great many different ways, and one only has proved really successful—viz., the use of cotton wool. I take a small folio, in which I have folds of newspapers, four sheets thick. Between each of these folds I place two sheets of soft, fine clear white cotton wool. I have this out with me, and as I gather the flowers I want to press, I lay them out carefully between the sheets of cotton wool, filling the sheet up as quickly as possible. I close it up in the newspaper, carefully turning it up all round the edges. When I get home I take the packets out of the folio, and place them in large books, under good pressure, and leave them as long as I deem necessary. Some flowers need a much longer time—those of a fleshy nature, for instance. The great secret is not to allow the air to touch them (by no means look at them to see how they are getting on) until they are quite dry. I have scarlet Geraniums, Violas, etc., which have been done more than two years, as fresh in color as at first, although in constant use on candle shades."

The Canadian Horticulturist.

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 are at our risk. Receipts will be acknowledged upon the address label.

A SURPLUS OF FRUIT need not be expected very soon, if we take the estimate given in a late number of the *American Garden* concerning the greater rapidity of increase in population in the cities than in rural places. The statement is as follows: "In 1850 we had eighty-five cities of an average of 35,000 inhabitants. In 1860 we had 141, and in 1870, 226 cities. A hundred years ago one-thirtieth of the people lived in towns; in 1860 one-sixth, and in 1870 one-fourth of our people were town dwellers."

FRUIT GROWERS' INSTITUTES are asked for by the fruit growers in New York State. Farmers' Institutes have been of such great value to agricultural interests that it is claimed that Fruit Growers' Institutes might accomplish similar benefits in developing the fruit industry, if placed in the charge of experienced and successful fruit growers. A special appropriation from the State is expected for their organization. It is a question whether this plan would have any advantage over ours of working in connection with the already existing Farmers' Institutes. The farmers of our country are the people who need to be instructed in horticulture as a branch of agriculture, and if a fruit growers' institute were called many of our farmers would think themselves left out.

A MODEL PEACH ORCHARD IN MICHIGAN.

IN the March No. of the *American Garden* Prof. Bailey, of Cornell, writes an article with regard to Michigan practices of peach culture, and says that the pruning consists in thinning out the small wood each year, that the shortening-in system is not practiced in Michigan, nor can he see any important reason for employing it when trees are properly grown. He also gives three illustrations showing model peach trees trained in what he calls the model system, at various ages.

Now, we are compelled to say that, after twenty-five years' experience in peach growing in the Niagara district, we believe we have made considerable improvement on this method of pruning. We find that by growing peach trees as described, without shortening-in, there is soon very little new growth except at the tips of the upper branches, the lower and interior limbs die out and the tree itself loses its vitality at an early age. On the other hand, by a vigorous shortening-in of one-half of the new growth every year, with a still more severe cutting back of the leading shoots, abundance of young and vigorous growth is continually produced, giving a larger amount of bearing

wood and lengthening the duration of the tree by many years. If anyone is doubtful of these results let him faithfully try the experiment.

Mr. Bailey adds that the following varieties are those which find most favor with the Michigan growers: Hale's Early, Lewis Seedling, Mountain Rose, Barnard, Snows' Orange, Yellow Alberge, Jacques' Rareripe, Switzerland, Hill's Chili, Golden Drop and Smock.

CHOICE GRAPES.

A LIST of choice grapes is given in the *Garden and Forest* for April 30th, by Mr. E. P. Powell, of Clinton, N.Y. His list of black grapes is Moore's Early, Worden and Herbert, and of these he places the Worden as No. 1 for market. He sees no use of planting the Concord any longer because the Worden is equally hardy, prolific, and is of better quality. It is sweet, as soon colored, hangs well on the vines, and is a better keeper than the Concord. For late black he places Herbert ahead of Wilder. Of red grapes his choice is Brighton, Gaertner and Salem. His list of white grapes is Diamond, Hayes, Niagara and Duchess. Of these he places Diamond at the head of the list, as it has been tested and has received no strictures on its quality, growth, habit or bearing qualities. He ranks the Niagara with the Diamond in value, but discards the Lady because it is so poor a cropper.

HARDY APPLES.

THE late bulletin of the Iowa Agricultural College contains some interesting notes on hardy fruits by Prof. Budd, some of which we will quote. Speaking of *Summer Apples* he says:

"The SWITZER is a very hardy tree up to the 44th parallel on dry soil and in airy positions. It is fully as large as the Fameuse, as handsomely colored and fully equal in quality. It is ready for use much earlier than the Fameuse. The BOROVINKA is like the Duchess in tree, foliage and fruit, but the fruit averages larger and keeps fully a month longer. The YELLOW TRANSPARENT is valuable for home use or market in localities not much subject to blight. The fruit is earlier, larger, handsomer and better than the old Early Harvest. The BLUSHED CALVILLE will prove more valuable than the Yellow Transparent over great areas of the West. The tree is much hardier, more nearly free from blight, the fruit is about as early, as large in size, is handsomely blushed and we think it is less perishable and better in quality. Of autumn apples, the LONGFIELD is a good tree, but not much hardier than the Wealthy. It is an annual and full bearer, of medium sized, blushed yellow fruit of excellent quality. The tree is an abundant bearer and excellent for both cooking and dessert purposes. The HIBERNAL is a true iron-clad and a continued heavy bearer. The fruit is large, even-sized, handsomely colored and of best quality for culinary use. Of winter apples, APORT is proving very valuable. The fruit is large, smooth, handsomely colored, fine grained, mildly acid and good for any use. If picked when beginning to color, it colors perfectly under cover and keeps well into winter even in southern Iowa The ANTONOVKA will be very valuable on ridges wholly without shelter, north of the 42nd parallel. On black soils in sheltered spots it is apt to blight. SCOTT'S WINTER, a Vermont apple, is as hardy as the Wealthy and an excellent bearer. The fruit is as large and handsome as the Winesap, a better keeper, an excellent cooker, and when fully mature a fairly good dessert fruit.

McMAHON'S WHITE APPLE.

As some references have been made to this apple, both in our journal and report, it may be well to note that it was the apple which attracted most attention at a recent Horticultural Convention in Madison, Wisconsin. Mr. Hatch, a well-known orchardist in that State, raised 300 bushels of this variety last year, and pronounced it hardy in Wisconsin and very profitable. It is described as large, round-obovate, yellowish-white, quality good, flavor pleasant sub-acid-flesh white and very tender.

THE LE CONTE PEAR.

MR. S. MILLER, writing in *Popular Gardening*, speaks unfavorably of the fruit of this pear for our northern commercial orchards. Our experience agrees with his. We had it in bearing last year and found the fruit poor in quality and by no means attractive, especially when compared with other pears of its season. Another objection is that the tree is very subject to blight, even when grown from cuttings.

This, like all other novelties, is being hard pushed by the nursery agent. Fruit growers, therefore, need to be posted with regard to the real quality of these new fruits and their adaptability to our climate. The Le Conte pear is particularly adapted to the Southern States and can be grown there with great profit.

COMPOSITION OF THE STRAWBERRY.

THE general composition of the strawberry is tabulated by the Tennessee experiment station as follows:

Water	90.52	per cent.
Dry matter	9.48	"
The dry matter contains:		
Glucose	4 78	"
Cane sugar	0.58	"
Free acid, as malic	1.37	"
Ash	0.62	"
Crude fibre	1.55	"
Crude protein	0.99	"
Non-nitrogenous extract	5.76	"

A LARGE FRUIT FARM IN ENGLAND.

AT Toddington, in Gloucestershire, is the name of Lord Sudeley's estate, on which is planted one of the largest orchards in Great Britain. The extent of land devoted to fruit culture is 500 acres. The whole is kept as clean as a garden, every tree and bush receiving proper attention. Hundreds of workmen are employed and an enormous amount of capital invested. In the work of cultivation there is a practical foreman engaged for every forty acres of plantation with a staff of men under him. The fruits grown are chiefly plums, currants, raspberries and strawberries with a few apples and pears.

It would appear that there were greater difficulties in England in the way of producing good fruit out of doors than we have in Canada, while the methods of cultivation are all much more expensive; but no doubt with a wealthy landowner like Lord Sudeley, the question of profit is less prominent than it would be with us.

FRUITS AFFECTED BY THE CURCULIO.

WHILE everybody is well aware of the enormous injury to our plum orchards caused by thecurculio, few people know the extent of the harm effected by it upon our apples and pears. Entomologists have shown us that the curculio may come to maturity in apples, and the numerous misshapen specimens of apples and pears which have to be thrown out in packing seasons are the proof of the extent of the mischief made by them. The Duchess apples are particularly subject to them, and for that reason particularly needs spraying early enough in the season to destroy the parent beetle. A Duchessapple tree at Maplehurst produced no fruit fit for market for many years owing to the curculio, every specimen being knotty and ill-shaped from punctures by the curculio, but since this tree has received a regular spraying there have been very few worthless specimens produced.

The Pranus Simoni appears to be notably free from the attack of the plum curculio. Professor Budd states that he has never known the fruit to be so injured.

THE STRIPED CUCUMBER BEETLE.

MR. C. M. WEED says in the *American Garden* that the only way to prevent injury is to fence out the insects. The simplest method is that of laying a piece of thin cloth over the hills before the plants are up, covering the edges of it with loose earth. To hold the cloth up in the middle, he takes two pieces of wire, puts their ends into the ground like the centre arch of a croquet ground.

Question Drawer

BUDDING STONE FRUITS.

56. SIR,—Will you kindly inform me at what stage of growth the stone fruits should be budded? And where can the scions be obtained?—A. BROWN, *Bethel, Ont.*

The time for budding the stone fruits differs with the different kinds; thus the plum is usually done about the middle of July,

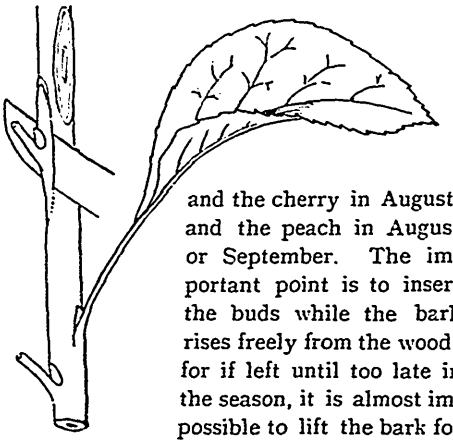

FIG. 53.

and the cherry in August, and the peach in August or September. The important point is to insert the buds while the bark rises freely from the wood; for if left until too late in the season, it is almost impossible to lift the bark for the insertion of the scion. The plum is one of the most difficult of the stone fruits to bud with success, unless the right time is chosen, which should be as early as the buds are sufficiently firm to be used, or about the middle of July. Plum stocks for grafting are grown from the pits by planting them in drills, as soon as gathered, about an inch and a half deep. These, at one year old, are transplanted into nursery rows and budded the following summer.

The peach stocks are usually budded during the first season of growth, and are easily done. Sometimes the peach is budded on the plum to give it greater hardiness; and *vice versa*, the plum on the peach for easier success, but such trees are less valuable then when budded on plum stocks.

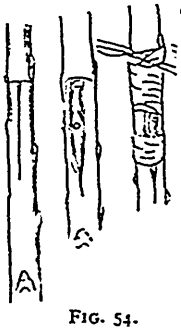

FIG. 54.

The whole process of budding is shown in our illustrations, fig. 53, showing the way in which a bud is cut from the stick ready for inserting; and fig. 54, shows the further process of cutting, lifting the bark of the stock, inserting the bud and tying it with bass wood bark, which completes the whole operation.

Sticks of buds are best cut from young trees so as to avoid having blossom buds instead of fruit buds Any nursery man will sell sticks of buds of desired varieties at a reasonable price.

KELSEY'S JAPAN PLUM.

57. SIR,—Has the Kelsey Plum (Japan Apricot) been successfully fruited in Ontario? Would it be likely to succeed if worked on our native red plums, or on the Lombard?—A BROWN, *Bethel, Ont.*

We have no reports as yet of this plum being fruited in Ontario, and we do not think it has been fully tested anywhere in our climate. No doubt it could be successfully budded on any of our native or cultivated plum stocks.

THE HOOSIE PEAR.

58. SIR,—What is your opinion of the Hoosie Pear?—H. HAYES, *Springfield.*

We do not know of any fruit grower in Canada who has fruited this pear. It is one of those novelties which may or may not be as valuable as reported. The Hoosie is a seedling originating in Massachusetts. The fruit is described as large, greenish yellow; flesh, fine grained, melting juicy, with a rich almond flavor, in quality ranking as best. Tree hardy and an abundant bearer. Ripens in the Fall.

NEW VARIETIES OF GRAPES.

59. SIR,—How do they get the new varieties of grapes?—H. HAYES, *Springfield.*

New varieties of grapes are produced by sowing the seeds of kinds having qualities of merit. In order to secure certain desirable qualities, resort is had to what is known as hybridization; that is, the flower is fertilized with pollen from some other variety, and the seeds resulting are the ones sown.

STOAT'S MONARCH RHUBARB.

60. SIR,—I have expressed to you two stalks of Stoat's Monarch Rhubard, which weigh four pounds, are two feet long. Will you kindly give me your opinion as to the merits of sample as to weight in proportion to size, *fineness of grain*, easiness of being pulped, flavor and accidity. I may state that it has been grown to some extent in this town for the last two years, is highly prized, and it is claimed by some that it takes less sugar.—A. MORTON, *Brampton.*

This is a most remarkable variety of rhubarb. The stalks were measured and weighed by us, and found to be as follows: Weight, two pounds; length, two feet; width, two and a half inches; circumference, six and three-quarter inches. The grain is finer than that of Linnæus or Victoria, and the acidity less, and it is easier pulped than any variety we know of. It looks very attractive on the table, holding its shape and yet so tender that it melts in the mouth. A good idea of the size of the enormous stalks may be had, when we state that one of them afforded a generous allowance of sauce for tea in a family of seven. Mr. Morton informs us that he imported this variety of rhubarb from Glasgow, Scotland.

RHUBARB FROM LINDSAY.

61. SIR,—I send you a sample of rhubarb, grown at Lindsay. How does it compare with that grown in more favorable localities?—THOS. BEALL, *Lindsay.*

This is also a remarkably fine sample of rhubarb, equal in size to any we have seen grown in the Niagara District, but as our subscriber has not given us the name of the variety, it is not easy to compare it with other kinds with any degree of fairness. It has the appearance of the Victoria, of which also the stalks are very large. The stalks of this sample average three feet in length, and the largest measured nearly two inches across its widest part. But it weighed no more than the stalk of Stoat's Monarch above described, while the flavor is much inferior, more acid, the pulp woody, and in every way it is less valuable than the latter.

SEED SOWING.

62. SIR,—Will you be kind enough to inform me through THE CANADIAN HORTICULTURIST, how to save the seed of the Strawberry, Gooseberry, Currant and Raspberry, and when to plant the same; also when to plant Tulip, Gladioli and Hyacinth seed. I saved some of the latter last Fall and planted it in the hot bed this Spring, but not one single plant came up? By answering the above you will oblige, J. LAWLEY, *Windsor*, BOX 246.

The seeds of Strawberries, Gooseberries, etc., are washed from the ripe fruit, merely dried on sheets of paper, and then sown in the open ground, afterward sifting over them an inch of light soil. In the Fall the little seedlings are transplanted and may be expected to fruit in about three years thereafter. Of course, this method of propogation is little used, except for the purpose of raising new varieties.

THE TETOFSKY.

63. SIR,—How long has the Tetofsky been in Canada?—DR. H.

About twelve or fifteen years.

Open Letters

AUTOBIOGRAPHY OF AN APPLE.

A Small Boy's Composition.

I am an apple.

The first thing of me is the flower. The next thing the flower dropt off and then you will see a little green apple; and then a great big round apple.

Then the men come round and pick me and send me away in baskets and put me in a big thing where I get all joged up. After a long while something put me in a red place, and—I will tell the rest of the story. They put him in a man's mouth and he ate him up.

DOCTOR NICHOL AND THE POEM "HOME."

SIR,—Perhaps you have noticed the death or Dr. Thos. Nichol, M.D., LL.D., D.C.L., of Montreal. He was a dear friend of mine. He called on me one day, just as I had written "Home." He read the lines, and I have since felt it cruel of me feeling pleased to hear him say, "I wish I had not read that, it makes me homesick."

GRANDMA GOWAN,

Mt. Royal Vale.

HOME.

(*For the* CANADIAN HORTICULTURIST.)

THE soft wind scatters odors sweet,
The Fireflies glitter in the air,
As on my moon-lit garden seat,
I breathe my evening prayer.

Oh how I love this solitude!
When mind by care oppressed,
And in sweet nature's quietude,
My spirit findeth rest.

Memory brings back long summer days;
I live the past all o'er again;
Again I climb the heathery braes,
Again I'm back in my Scottish hame.

I hear the echo of the Falls,
I see old Tintac's cloudy peak;
I hear the Cuckoo's plaintive calls,
And the Woodpecker's eager beat.

I hear the Laverock in the lift;
Oh thou Heaven-taught bird divine,
Why am I thus, of thee bereft?
Why came I to this distant clime?

Why did I cross the icy bar,
Where winter holds his sway so long?
My Scottish home is fairer far;
Land of beauty, land of song.

A rapture that I cannot name
Comes o'er me as my years grow brief;
Oh why does MEMORY still remain
Twining around my heart a wreath
Of hawthorn bloom and heather bell?
Lethe, with all its mystic powers,
Can never from my brain despel
The fragrance of my mountain flowers.

GRANDMA GOWAN.

1890 **1890**

THE NIAGARA DISTRICT

Fruit Growers' Stock Co.

(LIMITED).

In presenting you with the Company's Tenth Annual Circular we take this opportunity of thanking you for the liberal patronage extended to us in the past, and would most respectfully solicit a continuance of your shipments to our Agents this season.

We beg to apologize for the delay in issuing this season's circular, which delay was caused partly by the reorganization of the Company, through which the Company has more than doubled its number of stockholders, thereby largely increasing the stability of an institution which has always been admitted by the Fruit Growers of our province to be one of the most reliable and beneficial institutions yet established. We have already added one additional agency to our list, viz., Kingston, with a prospect of establishing one in Winnipeg if the fruit crops (which have not up to the present time maintained the promise of a few weeks ago) of the present season will warrant the Company in doing so. It is one of the prime objects of our Company, by establishing so many agencies, to cause the distribution of our fruits over as large an area as possible, thereby preventing "gluts" in our principal markets and maintaining prices.

The usual commission of ten per cent. for selling will be charged by the Company, and cheques will be issued every two weeks (or more frequently if desired) on the Imperial Bank, St. Catharines. To avoid errors and unnecessary delays in rendering "Sales Accounts," please write your Name and Post Office Address plainly upon each tag, and mark the number of packages in each shipment to each agency. Any shipper wishing to use a number instead of his name can do so by notifying the Secretary, who will forthwith allot him one.

We learn that some fruit growers and shippers have a wrong idea in reference to our Company, believing that only Members of the Company or Stockholders have a right to consign fruit to our agents, or that permission has to be obtained from the Company to consign to them. Now we would say, for the information of such, that no such requirements are necessary. We solicit consignments from all shippers, and would be pleased to make every fruit grower and shipper a patron, promising on our part to use every endeavor to handle promptly and carefully all consignments and to render Account Sales with the least possible delay.

The Agencies of the present season are well equipped for doing a large business in a most satisfactory manner. Our agents are all experienced men, capable of filling the positions they occupy, as a glance at the following list of Agents will subetantiate.

LIST OF AGENTS, AND AGENCIES NOW OPEN.

S. E. de la Ronde, agent for the city of Ottawa; Jos. Brown, agent for the city of Montreal; J. W. Brownlow, agent for the city of Toronto; J. B. Cairncross, agent for the city of London; Geo. Dudgeon, agent for the city of Guelph; B. Hare (late Ottawa agent), agent for the city of Kingston.

Shipping tags for all or any of the above agencies supplied free of charge upon application to the secretary or to any of the directors. A supply can also be had from any of the following stockholders, viz.: E. D. Smith, G. W. Cline, Winona; A. M. Smith, Roland Gregory, W. H. Bunting, J. H. Broderick, Andrew Haynes, St. Catharines; at express office, Winona; J. M. Clement's store, town of Niagara; INDEPENDENT Office, Grimsby; Express Office, Beamsville,

DIRECTORS.—E. J. WOOLVERTON, Grimsby, President and Manager; C. M. HONSBURGER, Jordan Station, Vice-President; D. VANDUZER, Esq., Grimsby; E. A. GORING, Esq., St. Davids; AARON COLE, Esq., St. Catharines.

J. W. G. NELLES,

July 4t. SEC.-TREAS., GRIMSBY.

THE only dairy which does not use water to excess is the dromedary. — *Pittsburgh Chronicle.*

DIED.

At his residence, Sunnyside, Aultsville, JOHN CROIL, Esq., aged 65 years.

IN London the vegetarians are publishing tracts to show the medical virtues and health-giving qualities of vegetables, and the "awfulness" of eating meals.

THE chrysanthemum can never become a popular flower in the west, where time is money, unless the name can be cut down to chrys.—*Pioneer Press.*

OUR BOOK TABLE.

EXPERIMENTAL FARMS.—Reports of the Director, the Chemist, the Entomologist, the Horticulturist, the Poultry Manager and the Farm Superintendent for the year 1889. A volume of 152 pages, showing much progress in all departments, towards that usefulness which only time can give an opportunity for development in an experimental line.

MINERAL RESOURCES OF ONTARIO.—Report of the Royal Commission, 1890. A. Blue, Toronto, Secretary of the Commission.

This is a most thorough investigation into the mineral resources of Ontario, giving also plans for their further development. The extent of our mineral wealth, as here shown, is astonishing, and shows that some of the hitherto rocky and least valued portions of our Province are likely to prove of even greater value than some apparently more desirable sections.

The whole is a most thorough and scientific treatise, and reflects great credit upon the gentlemen composing the commission.