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Title: The Canadian Horticulturist Volume 2

Date of first publication: 1879

Author: D. W. Beadle

Date first posted: Dec. 23, 2014

Date last updated: Dec. 23, 2014

Faded Page eBook #20141249

This ebook was produced by: Marcia Brooks, David Edwards, Paulina Chin & the online Distributed Proofreaders Canada team at <http://www.pgdpCanada.net>



THE
CANADIAN HORTICULTURIST,

PUBLISHED BY

THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

VOLUME II.

Editor:

D. W. BEADLE.

ST. CATHARINES.
E. S. LEAVENWORTH, BOOK AND JOB PRINTER, ST. PAUL STREET.

1879.

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The Canadian Horticulturist.

VOL. II.]

JANUARY, 1879.

[NO. 1.

APPLES IN THE LIVERPOOL MARKET.

When a cargo of apples arrives in Liverpool, the consignee does not hold them and look about for purchasers, but proceeds at once to put them up at auction on the next market day, and sell them off to the highest bidder. This being the understood custom of the trade, those who wish to purchase apples attend the sales and bid on the particular varieties and brands they wish to purchase. Some of our Canadian fruit growers have already won for themselves an enviable reputation in the home markets for the quality of their fruit and the honesty of the entire package, so that their brands have become known, and when they are put up the competition to secure them is animated, and in consequence they bring the best prices. We know this to be true in particular of the "beaver" brand, by which the apples of R. N. Ball, one of our members, is designated in the Glasgow market; a fact which emphasizes the advice given to fruit packers by L. Woolverton, in the number for December of last year.

We have just been favored with quotations from a Liverpool circular, of November last, sent to us by our esteemed Vice-President, W. Roy, of Owen Sound, giving the quotations at which different varieties of apples were sold at that time in the Liverpool market. From this it seems that apples from Canada have a standing there quite distinct from those sent from the United States, our Canadian apples sometimes taking the lead in price. It is very noticeable that the Newtown Pippin apple takes a very high stand in the home market, bringing as high as forty-four shillings and sixpence sterling, or about eleven dollars per barrel. Unfortunately this apple will not come to perfection in all soils. There is only here and there a soil that suits it perfectly, and no one may hope to reap any profit from it unless planted on a soil abounding in lime. There was, and perhaps yet is, near Poughkeepsie, on the Hudson River, an orchard of this variety that has attained a world-wide celebrity. The fruit is handled with the greatest care, only perfect specimens are put up for the English market, each apple is most carefully wrapped in tissue paper, and these packed in the very neatest of barrels got up in attractive style. It is said that these samples have brought as high as twenty dollars per barrel. If any of our readers have the soil that suits this variety, one that is warm, well drained, and abounding in lime, and will take the requisite pains in handling the fruit after it is ready for gathering, they will find it a profitable variety. In the writer's experience with it on a moist, cool soil, naturally deficient in lime, the fruit is often very poor in quality, and covered with black spots.

The Lady Apple sold for thirty to forty shillings per barrel, say from seven to ten dollars. This is strictly a fancy apple. It is in demand about the holidays for table decoration as much as for the dessert. The apples are very small, but most beautifully colored, with a bright red cheek on a straw-colored ground. We have known them bring as much and more in the New York market; but every specimen must be perfect, without a spot or blemish of any kind. It is very

probable that this kind also is more certain to produce perfect fruit in soils abounding in lime, for in other soils it is sometimes badly spotted.

Baldwins from the United States brought from six and three pence to thirteen and nine pence, while those from Canada are quoted at from twelve to thirteen shillings. If anything were needed to enforce the lesson of care in the selection and handling of fruit for market we certainly have it in the quotations before us. The difference between a dollar and a half and three dollars per barrel is well worth attention. The cost of the barrel, of the packing, shipping, and insuring, is as great in the one case as the other, but the chances of a profit are very decidedly in favor of the man who gets three dollars instead of a dollar and a half per barrel.

American Rhode Island Greenings brought from seven and six pence to eleven and six pence; those from Canada, from nine and three pence to eleven shillings. Esopus Spitzenbergs, from eight to thirteen shillings; Canadian samples, twelve and six pence. Talman Sweet, from Canada, sold for ten and nine pence; from United States, for twelve shillings. Rambo, from Canada, brought eleven and three pence; Yellow Bellfleurs, eleven shillings; Pomme Grise, twenty shillings; and Ribston Pippin, seventeen shillings. Russets, from the United States, brought from eleven and three pence to fifteen and nine pence; Maiden's Blush, from twelve and six pence to sixteen and six pence; Northern Spy, ten shillings; King of Tompkins, ten and six pence; and Wagner, from seven shillings to twelve and nine pence.

These are some of the leading varieties that are grown in quantity for market. It is very interesting to note the estimation in which they are held in Liverpool, taking the prices at which they were sold as an exponent of their popularity. The outward appearance has much to do with the sale of fruit everywhere, especially of kinds not sufficiently known to have established a reputation for superior quality. The exceedingly beautiful appearance of the Maiden's Blush has doubtless much to do with the price obtained for it in Liverpool, for certainly no one acquainted with the apples would ever give it the preference for quality over the Spy or King of Tompkins, and yet it brought a higher price than either. On the other hand, the Pomme Grise has established a reputation for quality as a dessert apple, and though lacking in beauty of coloring, readily brings five dollars per barrel. Besides this, in England the large apples are not considered as suitable for dessert, but as finding their appropriate place in the kitchen, hence the smaller apples of superior quality will bring a higher price than large apples.

We cannot close this article without directing the attention of our fruit growers to the Nova Scotia markets. The consumers of apples in that Province have been learning by trial and comparison that the apples of Ontario are of superior excellence. The writer received a letter from a life member of our Association, residing in Yarmouth, C. E. Brown, Esq., bearing date the 22nd of October, in which he says: "Although our fruit crop is large this year, and prices unprecedentedly low, markets all full of apples, and selling at fifty cents to a dollar and fifty cents per barrel, I have ventured to order for myself and friends one hundred barrels from Gage J. Miller," (of Virgil, near Niagara,) "expecting to pay the average price of three dollars per barrel where shipped; expenses will be from one dollar to one dollar and twenty-five cents per barrel. If Mr. Miller sends me a lot equal to those I have had from him in 1876 and 1877, I shall have no difficulty in distributing my hundred barrels at cost and charges, even at the considerable difference now ruling between Canadian and Nova Scotia or American fruit." Mr. Brown has taken great interest in fruit and fruit culture, and has been at considerable expense to procure fruit from Ontario, of different varieties, in order to test their quality, as compared with other fruit to be had in the Nova Scotia markets. Having become satisfied that the apples grown in Ontario were better in quality than those of Nova Scotia, he has spared no pains in bringing them to the notice of consumers, and has earned the thanks of Ontario fruit growers for opening up a market for our apples. Should any of the readers of the *CANADIAN HORTICULTURIST* feel disposed to take advantage of this opening, they will do well to remember that only choice fruit,

of the very first quality in every respect, and put up with care, so as not to be bruised in transit, will command attention either in the Nova Scotia or English markets.

ON RAISING FINE FRUITS FROM SEED.

BY JAS. DOUGALL, WINDSOR NURSERIES, ONT.

(From New York Weekly Witness.)

Few people know how easy and pleasant it is to raise new and fine varieties of fruits and flowers from seeds, or more would try to do it. Many are no doubt deterred from trying, owing to the importance that horticulturists of late have placed on artificial impregnation and hybridization of the flowers, which take more trouble and time than most people can spare, some hybridizers going so far as to say that no good fruits can be raised worthy of notice unless by this plan. This is a mistaken idea, for I venture to say that better varieties can be raised from planting the seeds taken from the best varieties in gardens where no inferior varieties are grown, than by artificial impregnation, the bee and other insects being natural agents for carrying the pollen from flower to flower, and intermixing it so as to create new varieties in a more successful manner than man can do.

I do not wish to deter any who have the skill and leasure from raising fruits by hybridization; some acquisitions have been made in that way and further experiments may, and no doubt will, be useful and beneficial. My present aim is to induce those who have not this leasure and skill to plant the seeds of their best fruits, and in due time in a few years they will reap their reward in many new and excellent varieties, the fruiting of which will greatly interest them, besides being of great and permanent benefit to the country.

As nearly all our best varieties of fruits have been chance seedlings, without any artificial care from man, and as my own experience in raising fine varieties has been so very simple and easy, and one which any person with a small garden may follow, being more especially suitable for ladies who delight generally in horticulture, and have more leisure than men, I have been induced to give the results of my practice and experience, though I fear your readers will think me somewhat egotistical before they finish this article.

I have devoted very little time or trouble to raising new varieties, and have never hybridized, but the results from what I have raised have been very great, and had I been able to devote more time and attention to it, they would, I think, have been truly wonderful. For the encouragement of others who have fine fruit gardens and orchards, I will recount these results.

SEEDLING PEACHES.—The first seedling fruits I raised were peaches. Having all the finest varieties then known, I sowed the stones, and planted the seedlings out in an orchard, budding them with the best old varieties, but leaving one shoot from below the bud, to test the quality of the seedling. Several of these were very fine, one more especially, the “Rosebank,” was and is one of the finest flavored peaches. Another, a seedling from the old French peach, the Monstrous Pompone, was the largest peach I ever saw—the third year that it bore it had a couple of bushels of fruit on it, none of which were less than thirteen inches in circumference, many eighteen inches. It was a clingstone, as large as the Alexander apple, and when preserved whole had a magnificent appearance. I have seen Heath’s Late Cling, grown at the south, nearly as large, but as grown in Canada, it was not one-quarter the size of my seedling. What would the latter have been if grown farther south, in a more genial clime for the peach! Unfortunately I was not then in the nursery business, and the few trees I propagated from it were killed, as was also the original tree, one severe winter, that killed all the peach orchards.

If the stones were taken from the best varieties of peaches, where none of inferior quality grew near, so that the pollen of the poor varieties did not intermix, and these were cracked and

planted where they were permanently to grow, at the proper distance apart—or they might be planted much closer as an experiment—probably every tree would have fine fruit, some extra, while the tree, owing to not being transplanted, would be much healthier and longer lived, as its large tap root running straight down (which is cut off in transplanting) would give the natural support to the tree that it so much requires when loaded with fruit; and at one year old they would be as large as those got from the nurseries, and would not, like them, receive a check from transplanting as the latter have.

SEEDLING GOOSEBERRIES.—My next attempt in raising seedlings was with gooseberries; I planted a short row of the best English gooseberries close together, touching these on one side I planted a row of Houghton's seedling, and on the other side a row of chance seedling, evidently a cross between the English and the wild prickly fruited gooseberry, that had sprung up among some seedlings from English gooseberries raised a few years previous. In this case the pollen from the wild variety which grew abundantly in a ravine near by had no doubt been carried by the bees. The seeds from each variety were saved and sowed separately, the result was that some seedlings from the Houghton were nearly as large as the European, while some of the latter resembled the Houghton, and were of all sizes and colors, while those from the wild hybrid were of every color and size, smooth, hairy, nearly prickly, with a good deal of the wild flavor, and strong, straight, upright shoots, nearly six feet high, covered with strong spines like the original wild species. Another cross which I intend making next season, between these and the best English, will doubtless be a still greater improvement; but had there been no English to cross with you might have gone on sowing the seeds of the wild long enough without getting any variation from the original.

SEEDLING CHERRIES.—One spring quite a number of seedling plums, cherries, apples, and pears sprung up in my flower garden, near a verandah, where the fruit had been eaten. Having abundance of fine fruit growing in my garden we used none but the very best, and the seedlings were from as choice fruit as could be selected. I transplanted them in the end of a tulip bed, planting thick, in two rows a foot apart and four feet long, intending to plant them out and prove them the following year, but they were allowed to grow in a thick cluster till one of them fruited—a cherry—which was so excellent that all the rest were taken up and planted elsewhere. From this cluster more good and really excellent fruits have been raised than could be readily credited.

The one that first fruited is a very large, late, and prolific Bigarreau cherry, of a dark reddish purple color, and excellent quality, which F. R. Elliot, Esq., of Cleveland, then secretary of the American Pomological Society, to whom I sent samples, pronounced "one of the best late market cherries." Another is in my opinion the earliest and best cherry yet raised, evidently a seedling from the "Early Purple Guigne," but a much stronger grower, with larger leaves, and fruit larger and finer flavored, a week earlier than the Early Purple, which it otherwise resembles. I sent sample trees of the best of my seedlings to leading pomologists in the United States. The Hon. Marshall P. Wilder, of Boston, writes me, "The Dougall's Early Cherry is a good acquisition, and has already made a fine tree." Ellwanger and Barry also wrote, "Please send us descriptions of your seedling cherries; No. 2 (Dougall's Early) fruited with us this season and promises well." Mr. Elliott also commended it highly, but as I have mislaid his letter I cannot quote from it. The fruit the first year a tree bears is never so fine as after it has borne for some years, the accounts from these cherries will therefore no doubt be still more favorable in a year or two.

Another seedling is a large black Bigarreau cherry, good quality and very prolific, but of a decidedly weeping habit, so much so that it has to be budded on mazzard stocks, six to eight feet high, to form a good tree. If budded low it never mounts up or forms a tall tree.

Another small batch of seedling cherries have fruited this year for the first time, several of

which are finer than the old varieties; one in particular, a large, dark-red Bigarreau, is as early as "Dougall's Early," described above.

SEEDLING PLUMS.—Of the plum seedlings several proved very fine, but the greater part were planted where the Curculio destroyed the fruit, so that I have only been lately proving them from young trees planted in my fowl yards. One of these bore last year for the first time, and proved to be the most beautiful plum I ever saw. It is nearly as large as the White Magnum Bonum growing alongside of it, ripening a little later, and of a different form, with a bright, clear, transparent, yellow skin—getting, just as it begins to ripen, a beautiful carmine cheek—more like a wax fruit than a true one. It is an early, great, and regular bearer, being overloaded with fruit this year again. I sent samples of it to the convention of the American Pomological Society, at Baltimore, last year, but the box and fruit got smashed on the way. Samples sent to the Fruit Growers' Association of Ontario took the first prize for the best seedling, and was called by the President "a truly magnificent plum."

SEEDLING PEARS.—The greater part of the pears in the first lot were struck with blight before they commenced bearing; and the apples were not planted out.

A friend and neighbor, the late Judge Elliot, raised from the seed of the Madeline Pear a very fine early pear, which I introduced to notice as "Elliot's Early." It is of excellent quality, about double the size of and ripening a week earlier than the Doyenne d'Ete, the earliest pear we had previously. The tree is the strongest grower we have, and very hardy.

SEEDLING LILACS.—In ornamental trees and shrubs I have not done much, except in roses and lilacs. Having imported all the best varieties of lilacs from Europe, which were planted in a nursery row, where they stood some years, several seedlings grew up beside them. One, when it flowered, was by far the best dark-purple that I had seen. The petals of each flower were reflexed, and the spike so long that it had some resemblance to an ostrich feather. I called it the "Prince of Wales," owing to its resemblance to his crest. Its beauty induced me to sow the seeds from the best varieties, from which several thousand have flowered, all good, and of every shade of color. From these I selected several very superior, which I named after the royal family of England. The second fine one that flowered was a superb white, the flower and truss more than double the size of the old white. This I called "Princess Alexandra." "Queen Victoria" is a very dark blueish purple, tipped with almost white. "Albert the Good" is by far the finest very dark red purple yet raised. "Azure," now called "Marchioness of Lorne," is a beautiful pale clear blue; another, a very dark double purple, while others nearly equally good have not been as yet named or propagated.

SEEDLING ROSES.—In roses my success has been good, more especially in moss roses, some of which are the most brilliant I have yet seen—bright velvety scarlet, shaded with dark velvet; some growing very tall, double, and perfect rose color. But it looks egotistical to write so much about the little I have done. My only excuse, and the sole object I have in view, is to induce others who have more time to go on and improve upon my experience. To those having a true love of horticulture nothing can be pleasanter than watching the tree fruiting for the first time, and testing the fruit in comparison with other fine varieties, or seeing the rose-bud expanding, and wondering if it will be equal or superior to the older sorts.

The apple and pear take a number of years to test, though this can be greatly accelerated by grafting shoots from the promising seedlings on bearing trees; but the plum, cherry, peach, grapes, gooseberries, and other small fruits, as also roses, and other ornamental shrubs and flowers, can be proved in the course of a few years from the seed. I feel now that my time has been wasted in the cares of business, which might have been more profitably and pleasantly employed in raising seedlings; but still, though verging on man's allotted span, I have many seedlings coming on which will fruit in a year or two, and I will plant many more seeds this year for myself or others to test.

Finally, all that is required for wonderful success is to secure the very best varieties of fruits and flowers to propagate from, plant them near together, without any of inferior quality to mix with them; save and plant the seeds from these, and the bees will do all the rest far better and more scientifically than man can do it, and with far better results.

HORTICULTURAL GOSSIP. VI.

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

OUR WINTER MEETINGS.—We notice that the Horticultural Society of Ohio have published in the papers a schedule of their approaching annual meeting at Dayton. It is to occupy three days, the time being occupied somewhat as is customary at most conventions or conferences. Essays are to be read by prominent members on stated subjects, and each is to be followed by a free discussion; besides this, reports will be received concerning the fruit crops in various places, and the meeting will close with the election of officers.

The question has already been brought up among us, whether a winter meeting of more than one day would not be advisable, and the answer depends upon the wishes of members. Perhaps our discussions might be more attractive and profitable if competent persons were previously appointed to introduce the several topics by either a paper or an address, to be followed by a free discussion; and if a schedule of the essays, topics, and business of such intended meeting were given the members through the pages of the *HORTICULTURIST*, even the local press might be used to draw public attention to the interesting characters of such a meeting, which might result in an increased number of members.

THE FRUIT ROOM.—It seems to me that one of the most attractive features of our meetings is very much undervalued by members, and that is the display of fruit. If fine samples and uncommon varieties were more freely exhibited, what a source of attraction to visitors, what a means of information to members might result; and possibly there would be more encouragement to this if the display could stand on exhibition for a longer time. Among other beneficial results of an extended interest in this feature of our meetings, may be mentioned the following points:

- (1) Members may extend their knowledge of the distinguishing points in varieties.
- (2) Variations of the same kind of fruit as grown in different localities will be evident.
- (3) Successful method of preserving fruits will be elicited.

Much interest is already taken in the show of seedling fruits, and this is one of the most important uses of the fruit room; but if a man cannot show a new seedling, let him show the best and most perfect specimens of what he has, whether old or new, that we may get our ideal of what a perfect model should be, and aim to produce it, each for himself.

BOOKS FOR FRUIT GROWERS.—The fruit growers of Grimsby having applied to the directors of the Mechanic's Institute, have succeeded in getting a great number of books added to the library which are directly useful to them; and the same course might be profitably followed in many other places. Who will dispute the superior value of a library containing such useful books, over one containing only novels and other light literature? The books which have been written on horticulture and agriculture are now so numerous that few can afford them all, and those who most need them are often least able to procure them. We beg to call attention to the following list as a few among the many that are very desirable: Downing's *Fruits and Fruit Trees of America*; Warder's *American Pomology*; Barry's *Fruit Garden*; Beadle's *Fruit, Flower, and Kitchen Garden*; Fulton's *Peach Culture*; Quinn's *Pear Culture*; Fuller's *Grape Culturist*; and Fuller's *Small Fruit Culturist*.

THE BEST TOMATO.—For two seasons past the profit of tomato culture has been exceedingly small; but in my experience the Hathaway's *Excelsior* is the most profitable kind we have. On one occasion our commission merchant in Guelph wrote us, "I can sell your tomatoes at ninety

cents per bushel, when other kinds are being sold in the market for fifty cents, because of the great superiority of the Hathaway for table use." For canning, too, it has no superior. The manager of the canning works here said he could afford to pay more for Hathaways than for any other variety, because there was less waste about it, and its round, smooth skin peels so much easier and so much more quickly than does that of the wrinkled kinds.

We tried the Acme last season, and found that it possessed a fine shape and a good flavor, and exhibited a peculiar bright pink color; but it does not seem to be any earlier than the Hathaway, and it is not so firm.

TO THE MEMBERS OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

BY J. C., AULTSVILLE.

I am pleased to be one of them. Referring you to our Editor's address as we have it on the fly-sheet of his last issue, we set him down as a remarkably modest man. Most managers of periodicals, at the year's end, tell us what they have done, and what they mean to do—of course a *bigger thing*. Our modest Editor just tells us the December No. closes the volume, and politely asks us to renew our subscriptions. That's business like. I take it for granted that we have all read the pages of our little monthly, and think you'll all agree with me that we have had in them value far more than our dollar subscription. It's our part, however, to help the work. If every one of us will try and enlist another subscriber, (that's not hard to do, I got three last year with little trouble), it will strengthen the hands and very much encourage the heart of our Editor. Many of you too can help him and benefit the rest of us with your pen. Try it, friends.

PROTECTION TO STRAWBERRIES IN WINTER.

BY A. M. SMITH, DRUMMONDVILLE.

Does it pay to cover strawberries in winter? When should it be done? What material is it best to use? are questions which are frequently asked me, particularly by persons just beginning their cultivation.

To the first question I would say yes; cover by all means. To the “when,”—as soon as convenient after the ground freezes up. Freezing and thawing and the heaving out of the plants is more to be dreaded than a continued heavy freezing. “The best covering” depends upon circumstances. Good barn-yard manure, if your ground is not already rich enough, is the best covering to use. Do not put it on thick enough to smother the plants, but just thick enough to protect them, and in the spring rake it off the crown of the plants around the roots, and let it serve as a mulch, and you will derive a thribble benefit from it, first, as a protection from frost; second, as a protection from drouth, and third, as a fertilizer. But if your ground is already in good condition, and manure is scarce, get any rough material that is convenient which will protect them, or retain the snow so that will form a protection, such as pine or any kind of evergreen brush, cornstalks, buckwheat or pea straw, marsh or swamp hay, wheat or oat straw (if free from grass and other seeds), or leaves from the woods, with a few brush thrown on them to prevent the winds blowing them away. Remove the covering in the spring as soon as the frost is permanently out. My practice with straw is to rake it off in piles till after I cultivate and hoe my plants, then run it through a cutting-box, so as to make it fine enough to work it in amongst and under the plants, and then put it around them to protect the fruit from the dirt. Leaves will be partially decayed in the spring and can be used for the same purpose.

Use any of these means, even as late as midwinter if you can not do it before, and if it does not pay you, your experience will be different from mine.

THE FUCHSIA AS A WINDOW PLANT.

It is no wonder that the Ladies' Ear-drop caused a sensation when it was first introduced to the public. It is said that the fortunate possessor in England realized a handsome sum from the sale of the first lot. He was a shrewd man, if the story be true. It is said that he never permitted the public to know that he had more than a plant or two. When he advertised it for sale he set a couple of them in full bloom in his show room. Two ladies came to see them; charmed with their beauty each bought one, paid the man his price, and drove home under the impression that they were the sole possessors of the lovely Fuchsia, for seeing no more they concluded he had no more. When they had been sent to the purchasers, another pair took the vacant places, and when these had been sold their places were supplied with others, thus keeping up the impression that they were very scarce, hence very costly, besides permitting each purchaser to feel very fortunate in having been able to secure a plant even at that costly price. And yet could our readers see the flower that created such an enthusiasm at that time, they would scarcely believe the story—scarcely believe that the Fuchsia of to-day was ever the poor little Ear-drop of the days that are past. The skill and care of the florist have wrought great changes in it since that time, and now it is one of the most attractive and beautiful plants with which our ladies can ornament their windows.

We are enabled through the politeness of Mr. Vick—who has done so much to encourage and cultivate a love for flowers—to give a little engraving, which will show the present appearance of the single and double varieties, and give some idea of their elegance and grace. As will be seen in the engraving, the



corolla is reflexed, turned back, itself very beautifully colored, sometimes rose color, or pink, or violet, or scarlet, or white, while the sepals are some other color, contrasting beautifully with the corolla. The single flower in the engraving represents one whose sepals are white, in bold contrast with the scarlet corolla. Not only do these plants present a great variety of coloring in their flowers, but they flower so abundantly, and each flower hangs so gracefully from its tiny bough, that the whole plant is an expression of grace, and elegance, and beauty.

Another quality which these plants possess commends them strongly to the majority of our friends, they are of the easiest culture, and grow rapidly. They need attention, to be supplied

with water, and kept free from insects, and as they increase in size to be transferred to larger pots. They enjoy being taken frequently to the kitchen and showered with tepid water from a fine rose with the garden syringe. Unless this is frequently done they are in danger of becoming infested with red spider. While requiring plenty of light, they should not be exposed to the direct rays of a burning sun, and should have fresh air as abundantly as possible. A little study of their wants while caring for them, will soon enable any one to grow the Fuchsia to perfection. It is always most attractive when grown in pyramidal form, a single upright stalk with the branches thrown out regularly on all sides. When first purchased of the florist the plants will usually be in three inch pots. As soon as the roots are found to have reached the sides of the pot, the plant should be carefully removed from the pot by turning it upside down and gently rapping the rim upon the edge of the bench, and preserving the ball of earth and roots entire; set the plant in the centre of a pot one size larger, fill in with rich, porous soil, pressing it in firmly around the ball as you put it in, give it a good watering, tie the centre shoot to a stake, and set it in the window to grow. In order to keep them symmetrical it will be necessary to turn them every day, else the branches stretching towards the light will soon give the plant a mis-shapen form. As soon as the roots have filled the new pot, making their appearance against the sides, it will be time to shift the plant into another pot a size larger, and so continue to shift them until the pot is as large as you care to have it. The plants require to be watered freely, but water should not be allowed to stand about the roots, and in order to prevent this the pots should be first well supplied with bits of charcoal or of broken crocks in the bottom before the plants are put in. Having the plant now in as large a pot as is desired, it will soon become a mass of bloom, and continue to bloom for a long time. After it has done blooming it is more satisfactory to throw it away than to winter it over and try to make it break nicely in the spring. Young plants can be had so cheap of the florists now, and they give so much better satisfaction than the average results with old plants, that it seems a great waste of labor and care to try to do anything with them.

In purchasing young plants it is very desirable to buy those which have naturally a symmetrical style of growth. There is a great difference among them in this respect, some that have very handsome flowers have a very straggling habit of growth, and are very difficult subjects in the hands of any but the most experienced to train in handsome shape. Your florist of whom you purchase will cheerfully advise you on this point.

With but few exceptions the Fuchsia is not a winter flowering plant. Its great value as a window plant is in supplying those who have no garden, the dwellers in large towns, or those who from any cause are confined to the window culture of plants. To these its beauty, ease of culture, and abundance of bloom make it a favorite plant. We have found the variety known as Mrs. Marshall to bloom in winter very well, but best of all is Speciosa, which with proper culture may be had in bloom from Christmas onward until spring. Of the other varieties it is hardly of any use to speak. New claimants for favor are being constantly introduced, and our readers will be better able to select those that please them than we can possibly do it for them.

DR. REEDER'S PEAR.

BY P. E. BUCKE, OTTAWA, ONT.

A great deal has been said and done to try and ascertain some cure or prevention of the pear blight, which in many instances has devastated our pear orchards, and has made this luscious fruit one of the most difficult of cultivation. No specific, so far as I am aware, has yet been found to guard against the hidden foe; and I fear it may be traced to a want of hardiness in the constitution of the trees themselves. I was very much struck on a recent visit to the asylum for the insane, at London, Ontario, at seeing a row of one dozen pear trees standing erect, in full foliage, in a part of the orchard set aside for this fruit, and a number of other trees of the same description with branches cut off, some being perfect stumps, whilst here and there were large gaps of blighted trees and blanks. On enquiry of the gardener I was informed that these trees had no special attention conferred upon them, but that they simply withstood the assaults made upon them because they were Doctor Reeder's. On further enquiry I find this variety is a seedling of the Winter Nelis, that it is described by Downing as a hardy, healthy, and vigorous tree, of a spreading open form, an excellent bearer, the fruit being from small to medium, the flesh is juicy, melting and buttery, sugary and vinous. He bestows on it the terms of "very good to best," which stamps it from so high an authority as worthy of special attention amongst pear growers. It ripens in November.

I would be very glad if any of the readers of the *HORTICULTURIST* who have any knowledge of this tree, would inform others if this is an exceptional case, or if it is generally hardy in various parts of the Province. Can the Editor, or Mr. Saunders, or the President, add anything of their own knowledge to the above? The trees are large, and to all appearances have borne for several years.

THE TREE PEDDLER.

FROM P. E. BUCKE, OTTAWA. (Not original.)

How doth the busy Tree Peddler
Improve each passing hour,
And peddle cions, sprouts, and seeds
Of every shrub and flower.

How busily he wags his chin,
How neat he spreads his store,
And sells us things that never grew,
And won't grow any more.

Who showed the little man the way
To sell the women seed?
Who taught him how to blow and lie,
And coax and beg, and plead?

He taught himself—that Tree Peddler—
And when his day is done,
We'll plant him where the long weeds grow,
That flutter in the sun.

But Oh! although we plant him deep
Beneath the butter-cup,
He's so much like the things he sells,
He never will come up.

The Canadian Horticulturist.

VOL. II.]

FEBRUARY, 1879.

[NO. 2.

IRON-CLAD FRUIT TREES.

An effort is being made by interested persons to call the attention of Canadian planters to certain varieties of trees to which they have given the appellation of iron-clads, and to produce the impression that the trees they are selling are new sorts of recent introduction, natives of northern latitudes, improved to very high quality by careful hybridization and culture. In order to impress more fully upon the mind of the public the value and novelty of these iron-clads, the trees are offered to them at seventy-five cents apiece for the apple trees and from one dollar to a dollar and a half for the pear and cherry trees. If the trees which are thus sold by them at these prices could not be afforded at a less price, no one could make any objection, and it would be cheaper in the end to the planter in northern latitudes to pay these prices for hardy trees than to plant those which will not endure the climate. But on examining the list of varieties mentioned in the circular which is put into the hands of our farmers, one finds among them that well known apple, the Tetofsky. This has been in cultivation by Canadian nurserymen for at least fifteen years, and any farmer in the Province can obtain it if he wishes for twenty-five cents. Another variety is the Duchess of Oldenburgh, which can be had of any of our leading nurserymen at the same price as any other apple tree, and which has been already widely disseminated by them and extensively planted. Another variety is the Grime's Golden, which was distributed a number of years ago by the Fruit Growers' Association to all its members, and which may be had as cheap as any other apple tree. The two varieties of pear which are offered as iron-clads at these exorbitant prices are the Flemish Beauty and Clapp's Favorite. The former of these has been in cultivation in this country so long that the latter has been grown from seed of the Flemish Beauty, by Mr. Clapp, so that the mother and daughter—the daughter herself no longer in her teens—are offered as recent introductions. It is too bad that such ignorance should prevail among the farmers of Canada as to make it possible for such things to be practiced upon them. No stronger argument than this need be adduced for the necessity of such an organization as the Fruit Growers' Association of Ontario, and the saving every farmer may effect for himself by becoming a member, and carefully reading the information laid before him in its reports and publications. These pear trees may be had of any respectable nurserymen for fifty cents each, in truth there is not a tree in the list that can not be had for that money, and if ordered by the hundred could be procured for less.

The impositions that have been practiced upon the purchasers of trees have reached to such a magnitude that one might expect that the farmers would cease altogether to deal with these middlemen, and make their purchases direct from the nurserymen. This is not the case however. Human nature seems to like to be humbugged. Venders of wooden nutmegs will not cease so long as purchasers can be found. There are men who prefer to be cheated—to pay three times the value of a thing because some silver-tongued salesman magnifies its virtues and

its value, and offers to bring it to their doors, rather than take the trouble to write to the producer and ascertain its price. A class of middlemen have sprung up to meet this very condition of the public mind, men who do not own any nursery at all, but who are prepared to buy where they can do so to the best advantage, as well as to sell to the best advantage. The *Huron Signal*, published at Goderich, deserves the thanks of all its patrons for showing up a firm of these pretended nurserymen, in its issue of the twenty-third of October last. There has been more than one of these firms doing business in Canada, giving the impression that they are nurserymen, when they are not, and their sales are large, and that at prices which Canadian nurserymen never think of asking. It seems as if it were because they do not charge such exorbitant prices that the public conclude that they can not have these wonderful new trees—new! like the Flemish Beauty Pear and Montmorency Cherry, trees that our grandfathers cultivated in the long, long ago.

If there be anything more ridiculous than the fact that men are to be found who can be so easily duped, it is the absurd cry sometimes to be met with in the newspapers, calling upon the government to protect the people from such impositions. If men like to part with their money foolishly what right has government to interfere. In these days of light every man may easily inform himself, so that he can know the true value of whatever is offered him, and if he buys without knowing it, he has only himself to blame for his folly.

THE DOWNING GOOSEBERRY.

BY A. BRIDGE, WEST BROOK, COUNTY OF FRONTENAC.

I notice by the report, that the Downing Gooseberry bush has proved a failure in quite a number of places. For my part, I cannot speak too highly of it; my bush has given the best of satisfaction, bearing heavy crops of berries every year. I picked nine pounds of berries from my bush this year. Last year the Gooseberry Worm attacked it, and would have destroyed the whole crop, but I picked them off when about two-thirds grown. In the fall I scattered unleached wood ashes liberally under the bush, in the spring I gave it another good dressing of the same material, this year there was not a worm to be seen. I think the ashes had a good effect. I never save ashes, but carry them out and scatter around my currant and gooseberry bushes when they are taken from the stove, at all seasons of the year; if there is snow on the ground I throw them on the snow. I never have any trouble with the Currant Worm, but all my neighbors have to use hellebore. I have no doubt that it would be better to save the ashes through the winter season, and scatter them about the bushes in the spring as soon as the frost is out. Ashes are a good fertilizer for currant bushes, and kill the worms that lie in the ground in winter.

The Downing Gooseberry suits me better than any variety I have tried. I have an English variety that has been planted seven years, and have received no fruit yet. The plants blossom well every year, but from some cause unknown to me, the fruit falls off when the berry begins to form. I received the plants from a friend at Rice Lake, near Cobourg, they fruited well with him every year; I was very much taken up with them, and got him to send me a few plants, but they will not bear fruit for me. I have tried them in clay and loam. I intend digging up this variety and putting the Downing in its place.

BARTLE'S AMERICAN DEWBERRY.

BY B. GOTT, ARKONA.

The Editor of the CANADIAN HORTICULTURIST desires a note of my experience with some fruit,—

“As apple, pear, or cherry,
Or peach, or grape, or berry.”

Now it is a somewhat difficult task to choose, even from this string of fruitful subjects, a topic that may be at once interesting and instructive to the many ripe readers of that very excellent magazine. However, having thought the matter over to some extent, and having spent some considerable amount of wonderment as to what I could contribute that might be of service to the cause, I have at length stumbled upon a short note respecting the American Dewberry, advertised and styled Bartle's American Dewberry.

Some two or three years ago, A. M. Purdy, of Rochester, N. Y., in his nice little monthly, entitled *The Fruit Recorder*, advertised and lauded this wonderful berry quite freely, and even promised to send a plant as a premium to any one renewing their subscription to the *Recorder*. Now my curiosity was pretty well aroused. What on earth could this wonderful berry be? For although it was pretty fully described and largely pictured out, yet good care was taken not to tell exactly what it was; you know this is sometimes done. Well, Webster says of it, that it is the fruit of a species of briar or bramble, the low-vined blackberry that creeps along the ground, of the genus *Rubus*. Wood, in his “Class Book of Botany” very largely and fully describes two species of Dewberry, under the genus *Rubus*, viz: *R. Canadensis* and *R. Trivialis*, or Northern and Southern Dewberry, but I was ignorant of the difference. Well, at length I sent for a couple of roots true to name, the veritable Dewberry about which so much talk was made, and in due course of time they came in a snug little parcel by mail, and perfectly dried, like small pieces of lifeless sticks. However I was not discouraged, I had faith, I believed there was luscious fruit in them, so I immediately immersed them in water, (in good Canadian water, over head and ears,) for a day or two, and then very carefully planted them out in a nice cool moist place, to give them all the good chances to revive, and they grew! The second year, to my utter astonishment, they ran (not creeping, as Webster has it,) along the ground in various directions, fully twelve feet. I thought sure now I shall have bushels of sweet Dewberries next, and I shall be initiated into all the mysteries of their growth. If those vines are covered their whole length with nice fruit, what a magnificent sight it will be. Surely my fellow fruit growers know nothing of this rich luscious treat, and I may make considerable money out of it. But alas! fond hopes are liable to be blighted. After all my waiting and anxious expectation I have never yet seen any fruit on these fondly prized roots (or vines either). I suppose there was something unsuitable either in the nature of the soil, or the atmospheric relations, or the country, or the sex of the plants, or something, for although they appear to flower well, and grow to my entire satisfaction, yet they perfect no fruit; they are abortive!

Now let us indulge in a reflection or two by way of lessons: 1st. Be careful how you experiment or speculate in new fruits. 2nd. Deal as near home as possible, “encourage home nurseries.” 3rd. Receive the glowing descriptions and advertisements of interested salesmen with an ample degree of allowance. 4th. Give more attention to the improving and perfecting of our own fruits that are sure and known to do well, than to looking to other climates, and suffering expense and loss in testing their fruits. If, however, any of our Canadian fruit growers

have had success, and think well of this celebrated Dewberry, we shall be most happy to hear at the earliest possible moment of their success, and to congratulate them in it.

FRUIT GROWING AT COLLINGWOOD, COUNTY OF SIMCOE.

BY W. B. HAMILTON, COLLINGWOOD.

It may be interesting to some of your readers to hear a short account of the fruit growing capabilities of this northern part of Canada. When Collingwood was first settled, about twenty years ago, the site on which the town now stands was a dense cedar and tamarac swamp, with pure sand instead of soil, with the exception of here and there a swale of black muck. However, nothing daunted, gardens were made and fruit trees planted. It was soon found, that although the winds and storms were very severe and piercing cold, the thermometer, in consequence of the large body of water in Georgian Bay, never fell lower than 15° below zero, though at the same time it would be 20° to 25° below further south. This proximity to the lake kept off the early frosts; and when further inland everything green would be destroyed by frost, yet our gardens of potatoes, tomatoes, corn, &c., would be quite uninjured. This encouraged a few to try peaches and grapes, and although not yet extensively grown, enough has been done to prove that these fruits will grow and ripen. I have seen as fine and delicious peaches as could be seen anywhere; and the Delaware, Concord, and other early grapes come to great perfection. But our greatest success is in growing plums. The climate and soil appear peculiarly adapted to the growth of this fine fruit, in every variety yielding abundantly and continuously year after year, with as yet no enemies worth speaking of. Some of our citizens are preparing to raise them largely for the eastern and western markets, and there is little doubt that their efforts and hopes will be realized, bringing them solid rewards for their enterprise and labor. The black knot and curculio have not yet found our orchards; the only insect to annoy is the tent caterpillar. Apples do not thrive so well, owing, I imagine, to the sub-soil being wet and cold; however, those who have taken some pains in draining deep have been rewarded with splendid fruit, showing that the climate is more propitious than the soil in its natural state. Pears, I think will succeed in time; I have not seen any but dwarf kinds, which have bore fine fruit.

I have been trying experiments in raising plums from seed, and so far have been very successful, and the experiments quite interesting, and I expect in time to add several new kinds to our already extensive stock. I grew a most luscious large bell or pear-shaped plum, which ripened early, but only fruited once when showing signs of dying; I cut all the top away, and transplanted into better, and I trust more congenial soil, it is growing slowly, but not enough top as yet to bear fruit. I have also a curious tree which—being quite the opposite to the one just named—refuses to be killed. Long after the winter sets in it is covered with its beautiful blue fruit and green leaves, and defies the storm to shake off its fruit, smiling at the effort, (while every other tree is bare even of leaves,) and allowing the wind to blow off the snow from its cheek, as much as to say, “Do your best, I can stand it.” I gathered the last of the fruit about the end of November. Other curious kinds I shall let you hear of when I have proved them better.

GROWING OF APPLE STOCKS.

“An ambitious amateur” inquires what varieties of apple and pear seeds are the best to sow in order to raise hardy stocks; and by way of explanation added, that he had seen it stated that the seedlings raised from crab apple seed made the most hardy stocks, and again had found that statement controverted.

We have not had sufficient experience in the use of seedlings grown from crab apples to enable us to say whether trees grafted upon them are any more hardy because of the crab apple stock. Nurserymen usually get their apple seed from orchards of native or seedling fruit, where the apples not being of such a quality as to be saleable in our markets, are ground up for cider. The stocks from these seeds are found to be healthy and vigorous; and indeed, if our nurserymen were to endeavor to procure crab apple seed, they would soon discover that it was not to be had in sufficient quantity to meet their needs. But from what is known of the influence of the stock upon the scion, there seems to be great reason to doubt whether the tree would be any more able to endure extreme cold because it was grafted upon a crab apple stock.

With regard to pear stocks, nearly all the seed that is sown is imported from Europe, and perhaps might properly be denominated crab seed. But very little seed however is sown in America in proportion to the number of stocks used, most nurserymen preferring to import the stocks themselves. European grown stocks are usually healthier and better than those grown in America.

FARMERS' GARDENS ON CLAY SOIL.

BY H. M. SWITZER, PALERMO.

Living as I do in a neighborhood where clay soil predominates, and as there is a prejudice existing against such soil for gardening, I thought I would write a few lines for the *HORTICULTURIST*, and endeavor to dispel that feeling to some extent.

I have often heard parties say, "You cannot have a good garden except on light soil. It must be sandy, or very light loam. Sand is easily worked, and you can do so at all times; it never gets too wet, and does not harden." Well, I will admit that there is a good deal in those remarks, but it does not follow that because we all have not such land to labor that we cannot grow equally well vegetables, berries, and fruits of all kinds. Light soil as a rule requires more attention than clay. It requires more manure; being loose, the liquid soon percolates through it. It is more given to weeds, and of course requires more labour to exterminate them. Gooseberries, and several kinds of grapes have a strong tendency to mildew, when the reverse is the case on the clay soil, whose stringent nature better retains the fertilizing qualities of the stimulants applied, and gives the benefit of them to the expected crops. Our farmers as a rule, particularly in this neighborhood, pay little attention to the garden. If you ask them, they will say, "Oh, it does not pay, we have not time, the land is too hard." A very great mistake. Nothing pays better than a cared-for garden; and the soil soon mellows to the industrious hand. Generally there is a little spot fenced in called a garden, near the farm house, but you need not go in to examine it, you have only to look over the pickets, and you see some currant bushes around the fence, struggling with long grass for the mastery, assisted by some burrs and Canada thistles; and a place scraped among the weeds for a dozen of tomato plants and a hundred of cabbage plants, or perhaps a few early potatoes, which, when you go to look for your crop, if the stalks are not green, you may have some difficulty to find. And this is not owing to the tendency of the soil to weeds, but to sheer neglect, when an hour now and again would do the work required, and the garden would be a pleasure to look at, as well as a source of profit—yea, more so than any other portion of the farm.

My garden is composed of stiff clay soil. In it I grow six different kinds of gooseberries; white and red raspberries; blackcaps in abundance for our family; fourteen different kinds of grapes, many of the Chasselas family, and no mildew of any kind interferes with them. Asparagus, and other vegetables thrive well. In the orchard, pears and apples succeed, also plums and cherries. But in the cultivation of strawberries I give in to the sandy soil; I think they are easier grown there, and I have no room in my patch to wait for them.

Now, Mr. Editor; my object in writing these few hurried lines is to endeavor to make the cultivation of the garden more popular, particularly on clay soil. I hope that the farmers through the country will not leave it altogether to their wives and daughters, as is generally done, but will assist them in preparing a nice place to grow vegetables and small fruits such as I have mentioned, with a well selected spot therein for the cultivation of roses and flowers of most all descriptions, which can be grown in this Province, and nowhere better than on clay soil.

NOTES ON THE MOUSE.

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

Wee, sleekit, cowrin, timorous beastie,
O, what a panic's in thy breastie!

* * * *

I doubt na, whyles, but thou may thieve;
What then? poor beastie, thou maun live!

* * * *

That wee bit heap o' leaves and stibble
Has cost thee mony a weary nibble!

ROBERT BURNS.

If we knew no more about the mouse than what we find under the name in an old copy of Webster's dictionary, we, as fruit growers, would have reason for gratitude. The definition is: "A small animal of the genus *Mus*, inhabiting houses."! Unfortunately for us, the mouse does not confine its devastations to the houses, but plays havoc among our trees out of doors as well. The Hebrew word is Achbar; and the mouse seems to have been an article of food in ancient times, for Isaiah, in chap. 66, v. 17, reproaches the Jews of his time with eating the flesh of mice and other things that were unclean. It is also stated that during the siege of Jerusalem by the Romans, mice, together with rats and dogs, were a common article of diet! Doubtless, however, as in the case of the locust, some other mode of extermination will better suit Canadians than that of serving them as a dainty dish at the breakfast table.

The mouse, which belongs to the sub-kingdom vertebrate, class mammalia, group rodenta, has, in common with other members of its group, no canine teeth, but two enormously developed incisors, with several molar teeth possessing flat crowns, exhibiting curvilinear plates of enamel; and the jaws work backward and forward in place of up and down. The house mouse (*mus musculus*) is quite distinct from the field mouse, of which there are many species, *Arvicola Austerus* being perhaps the most troublesome to us as fruit growers; and of this last named species alone, I have seen it stated that there are many varieties.

The following is a very complete list of Canadian representatives of the family *Muridæ*, for which I am indebted to Prof. J. Ramsay Wright, of Toronto, who kindly adds: "I shall be happy to identify any species for you."

- MURIDÆ— *Mus decumanus*, brown rat.
" *musculus*, house mouse.
Hesperomys leucopus, white-footed mouse.
" *Michiganensis*.
Erotomys rutilii, long-eared mouse.
Arvicola riparius, marsh mouse.
" *Austerus*.
" *pinetorum*, pine mouse.

In addition to the above list of Canadian species may be enumerated many others, such as *Mus messorius* (English harvest mouse); *Mus rattus* (the black rat); *Hesperomys aureolus* (red mouse of Pa. and South); *Hesperomys politris* (rice field mouse, S. States).

By many naturalists the *Arvicolæ* or *Voles* have been grouped separately from the *Muridæ*,

as not being true mice, because of a peculiarity of teeth which indicates an affinity with the beavers.

One kind of field mouse makes its granary under the ground, sometimes as much as a foot from the surface, and here in one repository there has been found as many as a bushel of nuts. He is aristocratic enough not to dine and live in the same room, but usually has another chamber off his store-house in which to live. He is not content, however, to keep within doors for the winter; for instead of hibernating like some other animals, he is peculiarly active in winter, no degree of cold seeming to inspire him with cowardice. Too dainty to be satisfied with what he has in store, he wanders forth in quest of other luxuries, as grasses, the seeds and roots of herbaceous plants, grains and vegetables. Nor is this enough, but intent on destruction, he makes his most dainty repast on the bark of some fine young apple or pear tree. He is delighted to get into the orchard of some careless fruit grower, where he finds rubbish about the trees, as if on purpose to protect him from view; and still more is he pleased when deep snows afford him every advantage for making tunnels and roadways from tree to tree.

Immense damage is yearly done in orchards by field mice, and they increase so rapidly that all our vigilance cannot do more than keep them in check. It is said that one female will sometimes rear three litters of six or seven each in a single season. The hawk, the owl, the skunk, and the cat are natural enemies of the mouse, and are consequently friends of the fruit grower. The female cat is considered a better mouser than the male, especially if she is milk-fed and has a couple of kittens. Cats, therefore, should be encouraged by the orchardist, and every other means possible taken to route these destroyers from his premises. Every pile of rubbish that can shelter them should be destroyed; the ground should be cleared along the fences, where too often we see nothing but briars and alders; old rails should be stood on end instead of thrown in heaps, that no harbour be given the mice, and that cats may seize them before they are able to hide.

Traps may also be used with success in the fields. One plan is to sink barrels about half way in the ground, and bore holes through the staves at the surface, into which the mice will take refuge at night. Another and a very simple trap is made by placing a roasted nut under a large flat stone, which is supported by a small stick of wood. The arrangement is such that as soon as the mouse begins his meal, the stone comes down upon his back.

In addition to these means of lessening the number of the enemy, it will also be found necessary to protect the trees themselves against his ravages. The usual method of protection against mice is to heap a mound of earth about each tree, and this has been found by the writer to be at the same time very simple and very effective. One writer recommends tarred bandages, but this would surely be more troublesome than the mounding process.

Mr. D. W. Beadle, of St. Catharines, has recommended painting the trunks of the trees with a mixture which is made as follows:—"Take one spadeful of hot slacked lime, one of clean fresh cow-dung, one of soot, and a handful of flower of sulphur. Mix the whole together with sufficient water to reduce to the consistence of a thick paint. Apply this on the exposed parts of the trees in dry weather in autumn." This would surely be much cheaper and more expeditious than any other method.

In any case, to be forewarned *should be* to be forearmed, and if any grower is hereby led to guard his orchard more carefully against this troublesome pest, he may save himself many times the amount of his subscription to the HORTICULTURIST.

THE BEACONSFIELD GRAPE.

There appeared in the *Montreal Witness*, of November last, the following article:

“GRAPE CULTURE IN QUEBEC.

“SIR.—It is important in a country like this—where farming is so little remunerative—to find some special thing that may be successfully cultivated, and for which profitable market can be readily found. I believe this desideratum is found in the vine. Naturally very hardy, it appears to be well suited to both our climate and soil, growing in a wild state as it does all over the country. But for the purpose of commerce it is necessary to find some cultivated variety that will ripen early—both to avoid the danger of early frosts, and that it may compete successfully with the foreign fruit that is usually imported here in the month of September. A variety discovered only some two or three years since, and which has been now named ‘The Beaconsfield,’ appears to meet these requirements—ripening fully between the 25th of August and the 5th of September, earlier than any foreign fruit can be imported. It is very prolific, and of rapid growth; the fruit is large, of a dark purple color, sweet and luscious, and fit for table use, being quite free from that acid taste that foreign imported fruit necessarily has, by reason of its being gathered in an unripe state for a distant market.

“Having gathered all the information I could respecting this vine, I determined to try it, and in the spring of 1877 I planted a vineyard of about three acres with two thousand five hundred vines. A few of them bore fruit that year, and the present year, (1878) gave me a crop of nearly a ton weight, comparatively but a few only of the vines bearing, but the yield of these was very satisfactory, numbers of the vines bearing as many as thirty good-sized bunches, and one in particular fifty bunches. I believe from what I have observed that I am justified in estimating my crop for next year at not less than thirty tons of grapes. As one-half of this crop would more than repay the total cost of the vines, labor, and all expenditure in the ingathering of that crop, it is evident that this will yield a very great profit; and I am so well pleased with the result of my experiment in its financial aspect, and as showing that the vine can be successfully cultivated in this country, that I have made arrangements to plant four thousand vines more in the coming spring; this will give me over six thousand vines, occupying about eight acres of land.

“I am anxious to induce our people to engage in vine culture, for I am convinced it may be made a most important and profitable adjunct to every Canadian farm, and in many cases a principal source of revenue. It is hardy, does not require a specially excellent soil, and its cultivation is perhaps less costly in time and labor than that of any other fruit.

J. H. MENZIES.”

“POINT CLAIRE, 11th Nov., 1878.”

The attention of the Editor of the *CANADIAN HORTICULTURIST* was called to this new grape by one of the Directors of the Fruit Growers’ Association, who requested that the above article should be published for the benefit of the members who would be interested in so early and valuable a grape. The Editor wrote to Mr. Menzies, asking him to give the history of this grape, where and when it originated, and by whom it was first cultivated and introduced, but up to this

time no reply or information of any kind has been received from Mr. Menzies. However, from other sources your editor received the following circular:

“BEACONSFIELD, POINT CLAIRE, P. Q., 2nd Dec., 1878.

“Dear Sir:—

“On the 2nd September last, I sent a few grapes grown by me here in the open air, to the Editor of the *Daily Witness*, and that gentleman was so good as to notice them, in his issue of the same date, in the following terms:—

‘IS THIS A LAND OF VINES?’

‘The early Norse voyagers who reached America by way of Greenland reported having reached a country of clustering vines. Champlain found the shore of the Lower St. Lawrence so luxuriantly hung with grapes that he called the Isle of Orleans the Isle of Bacchus. The Riviere au Raisins at Lancaster doubtless owes its name to a similar phenomenon. It is possible, then, that if we have not our hill sides covered with vineyards, it is not because grapes will not grow well, but because we have not discovered the best varieties for our climate. Our wild vines are hardy enough, and their fruit might be improved by culture to be equal to the best. We have been astonished by a present of a box of fully ripe grapes grown by Mr. J. H. Menzies, of this city, in the open air at Pointe Claire. The grapes are riper and sweeter than those that have hitherto reached us from the south, and are of as good quality as are sold. We should have expected to see grapes ripen in Montreal two or three weeks hence, if at all, but Mr. Menzies says he has been eating grapes for a week back. Mr. Menzies planted in the spring of last year a vineyard of twenty-four hundred vines, this being the first bearing year of a part of the vines only. He is now convinced that to the inhabitants of this island the culture of the grape might prove an important source of wealth.’

“Having thus succeeded, as I think, in proving that the vine can be cultivated with success in Canada, I determined to engage more largely in it; and being fully persuaded that vine-culture would prove very profitable to our people, I again drew the attention of the editors of the *Daily Witness* and the *Star* to the subject. The former gentleman inserted in his paper a letter I wrote him, and the latter commented on this letter in his issue of the 19th November, as follows:

‘GRAPE CULTURE IN QUEBEC.

‘The idea of successfully cultivating the vine in our northern country is one which upon first thought seems to be so preposterous as to merit hardly a moment’s serious consideration. The mind naturally reverts to the sunny climes of France, Spain or Italy as the natural home of this most luscious of all the fruits of the earth. But notwithstanding this natural feeling, the question may be asked why it should be so? The vine is hardy, and appears to be well suited to both our soil and climate, as it grows readily in a wild state; and it may be taken as an axiom that where a tree or plant is found to grow spontaneously, that place is suitable for the successful cultivation of such tree or plant. It remains only then to select a

variety which will mature fast and ripen early enough to escape the possible early frosts, and compete with the foreign fruit which is imported so extensively here during the month of September, to make the successful cultivation of the vine in Canada a possibility. A variety for which these qualities are all claimed, and which has been named the 'Beaconsfield,' was discovered some three years ago, and brought before the attention of Mr. J. H. Menzies, of the Mechanics' Bank, a gentleman who has given the question some considerable attention, and who was so favorably impressed with the appearance of this new claimant for public favor, that with commendable enterprise he invested in a quantity of plants sufficient to start a little vineyard at his country house at Pointe Claire. Mr. Menzies says that having gathered all the information he could in regard to this vine he determined to try it, and in the spring of 1877 he planted a vineyard of about three acres with 2,500 vines. A few of these bore fruit that year, and in the present year (1878) he got a crop of nearly a ton weight, comparatively but few of the vines bearing; but the yield of these was very satisfactory, numbers of the vines bearing as many as thirty good-sized bunches, and one in particular fifty bunches. He believes he is justified from his observations in estimating his crop for next year at not less than thirty tons of grapes, and as one half of this crop would more than repay the total cost of the vines, labor and all expenditure to the in-gathering of that crop, it is evident that this will yield a very good profit. Mr. Menzies says the 'Beaconsfield' is very prolific, ripens fully between the 25th August and the 5th of September. The fruit is large, of a dark purple color, sweet and luscious, being quite free from that acrid taste that foreign imported fruit necessarily has, by reason of its being gathered in an unripe state for a distant market. So well pleased is Mr. Menzies with the result of his experiment in its financial aspect, and as showing that the vine can be successfully cultivated in this country, that he has made arrangements to plant an additional 4,000 'Beaconsfields' next spring, which will give him upwards of 6,000 vines and a vineyard of about eight acres of land. The success of Mr. Menzies opens to the mind the possibility in connection with grape culture in Canada, which is at once novel and startling, contributing as it would a new industry to Canada, both important and profitable.'

"In consequence of these notices of the press, I have received so great a number of communications and enquiries on the subject of vine-culture—all of so encouraging a nature—that, upon consideration, I have determined to supply the demand for these vines which has sprung up, from my own vineyard.

"For this purpose, I have associated with myself a practical nurseryman, Mr. Geo. F. Gallagher, the gentleman who introduced the vines to my notice; and, on the other side, I beg to hand you a card referring to these vines, to which I invite your kind attention.

"Yours truly,

"J. H. MENZIES."

The following is the Card referred to:—

"The Beaconsfield Vineyard, Pointe Claire, P. Q., Menzies & Gallagher, Proprietors. The proprietors are prepared to supply vines of the 'Beaconsfield' variety at the undermentioned prices:—Per dozen, \$12; per hundred, \$75; per thousand, \$500; delivered, carriage paid to any railway station in Canada. Mr. Gallagher may be seen daily, at the Windsor Hotel, Montreal, and will be happy to advise with intending purchasers, either personally or by letter, upon all matters connected with vine-culture, suitability of soil, time and manner of planting, pruning, etc.

"The public are informed that the name of this vine, 'The Beaconsfield,' has been registered in Canada, and cannot be used by any other than the undersigned proprietors.

"All communications addressed to Mr. George F. Gallagher, Windsor Hotel, Montreal, will receive prompt attention.

"MENZIES & GALLAGHER.

"POINT CLAIRE, 2nd December, 1878."

At length a letter was received from a gentleman who stated that he had seen Mr. Gallagher, the partner of Mr. Menzies, who said that the Beaconsfield is a new variety raised from seed in Rochester, New York, and introduced by him to Mr. Menzies. Inquiries were then made of several of the best informed and leading nurserymen and dealers in grape vines in Rochester, but they all replied that they had never heard of the Beaconsfield grape, and felt confident that no grape by that name could have been cultivated to any extent about Rochester without having come to their knowledge; and that the description given in Menzies & Gallagher's circular was very closely that of the Champion Grape.

About the same time information was received that Mr. Gallagher called it by that name (the Champion,) when he first sold it to Mr. Menzies, and that Mr. Menzies had told others that he had planted five hundred vines of the Champion grape. Following up this clue, we have ascertained that George F. Gallagher has resided in the vicinity of Rochester from his youth; that he has been for some time engaged in the business of selling trees and other nursery products, as a travelling salesman and dealer, and that in the spring of 1877 he bought three thousand five hundred vines of the Champion grape.

We are further informed that Menzies and Gallagher have not yet raised young vines of their so-called Beaconsfield, sufficient to supply the additional four thousand vines which Mr. Menzies says he intends to plant next spring, and that all the vines they sell of it for planting in the spring of 1879 must come from Rochester.

There is but one conclusion possible from these facts: Beaconsfield is only the Champion under a new name. Under that name the firm of Menzies and Gallagher offer to sell vines of the Champion grape at the modest price of twelve dollars per dozen, the same vine that is advertised in the catalogues of the Rochester nurseries at fifty cents each, and may be bought, vines two years old, at fifteen dollars per hundred, and one hundred and twenty-five dollars per thousand. Let no man after this ask "What's in a name?" There is much in a name. A name may double the value of a grape vine, if you do not know it by any other name. What's in a name? That which man holds dearest may be in a name—*honor*.

The Canadian Horticulturist.

VOL. II.]

MARCH, 1879.

[NO. 3.

WESTERN NEW YORK HORTICULTURAL SOCIETY.

This body has recently held a very interesting and profitable meeting in the city of Rochester, continuing in session for two days. There was a fine exhibition of fruits; Messrs. Ellwanger and Barry exhibiting a collection of forty-eight varieties of apple and sixteen of pear, and other gentlemen exhibited smaller collections. Two white grapes were shown which attracted considerable attention, the Pocklington, shown by John Charlton, and the Prentiss, shown by T. S. Hubbard. Mention was also made of a Quince known as the Bentley, which came from Connecticut, and was grown at Byron, N. Y. It is larger than the Orange Quince, and ripens some two or three weeks later; and the question was raised, but not definitely settled, whether it was the same as the variety grown in some parts of Connecticut and known as the Champion Quince, which also ripened later than the Orange variety. The Stark Apple was on exhibition, a new sort, which is thought by some to promise well as a valuable late keeping market apple.

Upon the question whether we are in danger of an over-production of fruit, and how to increase both the home and foreign demand, there seemed to be great unanimity of opinion that there was no danger whatever of an over supply of really first-class fruit, and that the demand for fruit at home and abroad could be largely increased by a steady supply of first quality fruit, put up and marketed with care, in a neat and attractive manner. The eager haste for quantity must give place to careful attention to quality. To secure this, attention must be paid in planting the trees, to set them upon land suitable for the production of the particular fruit planted, whether it be apple or pear, or peach, or plum. Not all land is suitable for fruit trees, and some varieties of fruits do better on soil of one kind than that of another. The plum delights in a strong clay soil, the peach in a light sandy or gravelly soil, and so each variety of fruit should be planted in the soil and situation best adapted to the perfect development of that particular fruit. Care must also be taken to keep the trees in a healthy and vigorous condition by proper cultivation and pruning, and when they bear fruit must not be allowed to carry more than they can bring to perfection. Nothing is more injurious to the appearance and quality of the fruit than over-loading. Thorough thinning out of the crop soon after the fruit is fairly set is essential to the production of fruit of first quality.

And after the fruit is grown it must be picked with care and carefully sorted, and put up in neat and attractive packages, and honestly packed, with no inferior specimens hidden away from sight, but uniformly good throughout. There is always a market for such fruit, both at home and abroad, and yet there is much in knowing the tastes and demands of different

markets, and in putting on to each market those varieties, and put up in the way that sells best in that particular market. Not only does the planting and growing and packing need to be systematized, but the marketing. If a number of growers would combine together and send their agent to the great markets of Europe and ascertain the varieties that sell best in the several markets, and in what style of package they are most acceptable, and then pack and ship their fruit accordingly, they would find it greatly to their advantage. In discussing the subject of fruit packages, it was very generally admitted that the law of the State of New York regulating the size of the apple barrel, and fixing it at one hundred quarts, had operated prejudicially to the interests of the fruit growers of that State, inasmuch as other States and Canada had not adopted the same standard, and their apple barrel being larger, those from the State of New York could not be sold while the larger barrels were to be had, except at a difference in price greater than the difference in capacity would call for. Much stress was laid upon having the packages present a neat and tidy appearance, especially those in which grapes and small fruits were marketed. Objection was made to the packing of choice peaches in crates, so much of the fruit was injured by the sharp edges of the slats. Some spoke favorably of marketing peaches in baskets made with wide splints and having a board cover. Grapes were best marketed in straw-board boxes holding either two or three pounds of grapes, and these packed securely in crates. The two-pound boxes cost twenty-five dollars per thousand, and the three pound boxes cost thirty dollars per thousand, and as the box was weighed with the grapes there was no loss to the shipper. Yet there is inquiry for a still cheaper package.

Considerable time was spent in discussing the different methods used to destroy insects injurious to fruits and fruit trees, particularly the Codlin Moth, and the Apple and Peach Borers, and the Canker Worms. Experiments had been made with the view of ascertaining whether the Codlin Moth larvæ came down the trees or went up the trunks. Two bands had been tied around the trunks of the apple trees, the one a little distance above the other, and on keeping a careful account of the number of the larvæ found in each band it was ascertained that there were three in the upper bandage to two in the lower. Experiments had also been made with the medicated bandages, and it was found that the medication was repulsive to the larvæ, so that comparatively few went under them to die, hence these were not likely to be successful. Three years trial of bandages put on when the Wilson Strawberry is in blossom, and examined every ten days until September, has resulted in the destruction of such a number of the Codlin Moths as very considerably to lessen the number of wormy apples, so much so as to make the crop of fruit valuable that had previously been rendered nearly worthless. The Canker Worms could be overcome by smearing some sticky substance on the trunks of the trees to catch the female moths in their ascent, and by sprinkling the trees just as the buds were bursting with paris green and water. For the borers it was recommended to wash the trunks of the trees with soft-soap mixed with carbolic acid. It was also stated by several that if hogs and sheep were turned into the apple orchards they would destroy a great many insects. To prevent the sheep from knowing the trees it was necessary that they should have free access to plenty of fresh water, and some thought that it would be advisable to paint the trunks of the trees with whale-oil soap mixed with sheep dung in addition.

The discussion on new Peaches elicited little information beyond the fact that a great many new varieties had been brought out during the last year or two, the most of them early sorts, bearing a close resemblance to Hale's Early, but ripening before that variety. The Salway ripened too late for the climate of Western New York.

Some new white grapes were mentioned, giving promise of being valuable, the Pocklington, Prentiss, Niagara, and Duchess.

With regard to the Russian apples, P. Barry stated that none of them were as valuable and

as high flavored as our well known American varieties. The Red Astracan, Duchess of Oldenburg and Alexander were among the best of them. Their value consisted in the hardiness of the trees, enabling them to endure the rigours of very cold climates, but they would not be grown where the higher flavored American sorts succeeded.

The following varieties of plum were named as being valuable for planting for market, Reine Claude de Bavay, Lombard, Bradshaw, Coe's Golden Drop, Hudson River Purple Egg, Monroe Gage, and Shropshire Damson.

Several very interesting papers were read, to which we hope to refer at some future time.

FRUIT TREES IN THE OTTAWA VALLEY.

LETTER FROM HUGH H. McLATCHIE, TEMPLETON, PROVINCE OF QUEBEC.

I did not spend a dollar last year from which I got a better return than from my subscription to the Fruit Growers' Association.

I enclose a small piece of Fameuse wood showing how it is affected by the frost. In the spring the sap flows up between the bark and wood, the buds start, (except the tops of the branches,) but the wood dies, turns white, and is soft in the centre, and the bark turns black. The Red Astracan, Alexander, and Montreal Waxen do the same. The wood of the Talman Sweet turns black, but does not rot the same as the others mentioned.

Does that not account, at least in part, for the fact that Ottawa has imported seventeen thousand barrels of apples early this fall, and the country around Ottawa annually import and plant thousands of trees, yet the importation of fruit goes far to show that orchards are scarce.

When I first planted apple trees I thought the ironclads, such as grow about Montreal, were hardy enough for this section, but I find it is steel-plated armor that is needed. I have tried dozens of varieties, and have not found one winter apple sufficiently hardy to stand our winters, but have succeeded better with summer and autumn sorts. The Tetofsky and Duchess of Oldenburg seem to be proof against almost any degree of frost. Montreal and Irish Peach Apple, quite hardy; and most of the Crabs, but some of the Crabs fail too.

Summer apples ripen their wood and drop their leaves early, consequently they are better prepared for the extreme frosts of this section of country. Perhaps my test is rather hard; our orchard is a rich clay soil, underdrained over four feet deep, and I thought rank growth and deficiency of lime were the cause of failure, but I have seen the Fameuse in Ottawa city, on limestone soil, doing no better than my own. I do not say the amateur cannot grow these varieties by proper summer pruning, slow growth, and suitable soil, but what is wanted for general cultivation are sorts as hardy as the Duchess of Oldenburg Apple and Transcendant Crab, that will thrive on any soil. As far as my experience goes, I am convinced that Ottawa must find new sorts, either of named varieties which have proved hardier in the north-west than the Fameuse, or seedlings grown on her own soil.

The Common Red Plum does well here; but Mr. Bucke gives a wrong idea, on page 168 of the *HORTICULTURIST*, about the Curculio; they are here in abundance. We smoked the trees with gas tar this year, they were less damaged than usual; but some trees left to test the tar theory seemed to be no worse injured than those that were smoked. The abundant crop this year was perhaps due to some peculiarity in the season, or it may be the Curculios overdid the thing the last few years and starved themselves out.

THE GREEN GRAPE VINE SPHINX.

(*Darapsa myron.*)

BY W. SAUNDERS, LONDON.

This insect is common almost everywhere throughout Ontario, and must be familiar to every grape grower. The larva is rather a formidable looking creature, with a bull-dog sort of look about the head when at rest, arising from its power of drawing the head and two anterior rings of the body within the next segments, and thus unnaturally distending them. In this appearance it simulates the way of a well bred porker, with its fat cheeks and small head, and hence has sometimes been called the Hog Caterpillar of the vine. It is well represented in the accompanying figure 2.

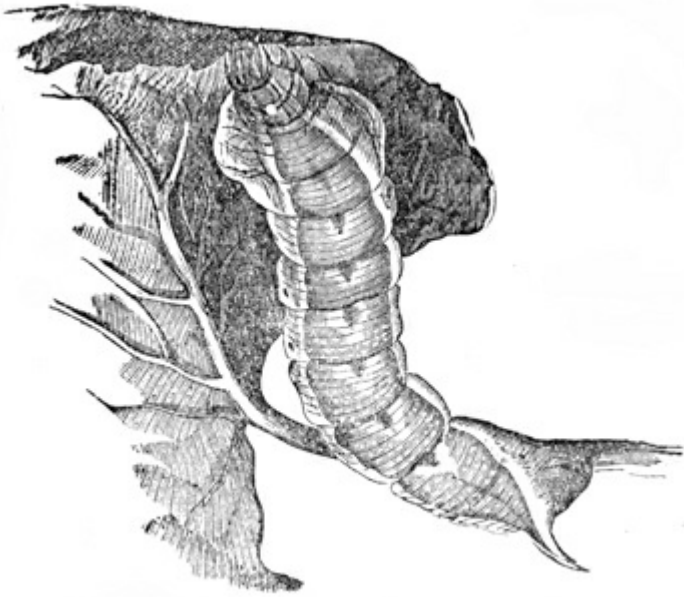


FIG. 2.

When full grown it is about two inches in length, of a green color, dotted with pale yellow dots or granulations, with a row down the middle of the back of seven reddish or lilac dots, varying in intensity of color, and surrounded by irregular patches of yellowish. There is also a pale lateral line, bordered below with a darker green, which extends from the head to the horn at the tail; the yellow dots on the body are also so arranged as to form along each side a series of oblique lines or stripes extending backwards. The horn is pale reddish, thickly covered with minute black points.

This larva is very destructive to the foliage of the vine, its appetite is so enormous that one or two of them, when nearly full grown, will strip a small vine of its foliage in two or three nights. On this account they are easily discovered, and should be at once picked off the vines and destroyed. Sometimes when the foliage is dense they may be more readily detected by their large dark-brown castings, which strew the ground under their places of resort.

But nature has provided a remedy, in a minute parasitic fly, which, though small is an effectual check to the otherwise alarming increase of this injurious insect. In figure 3 the larger drawing is a magnified view of this fly, the smaller one showing it of the natural size. This little friend punctures the skin of the caterpillar, and deposits her eggs



FIG. 3.

underneath, where they soon hatch into young maggots, which revel on the fatty portions of the body of their victim until they are full grown. When the larva is nearly matured, and apparently in a thriving condition, suddenly numerous little heads may be seen forcing their way through the skin of the back and sides, and within an hour's time the entire brood of grubs have emerged. With their hind extremities still remaining in the openings through which their bodies have escaped, they at once commence to build about themselves small, firm, snow-white cocoons, which, standing on end, are usually so abundant as almost to cover the entire body. This wonderful and curious change in the appearance of the worm is completed in about two or three hours. Fig. 4 represents one of the larva thus infested with its attendant crop of the cocoons of the parasite. After so many active creatures have escaped from its body, the larva, as might be expected, is much reduced in size, and so weakened that it invariably dies. From the shape and color of the parasitic cocoons, they are sometimes thought to be the eggs of the caterpillar, and the very thing that should be preserved and cherished is destroyed, thus showing the importance of correct information on these points, so that all may be able to distinguish friends from foes among the insect tribes. A very large proportion of these larvæ are thus annually destroyed by this friendly parasite.

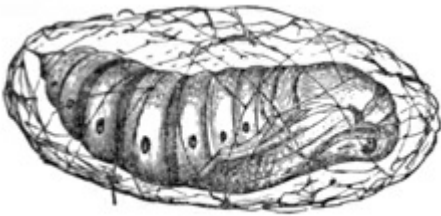


FIG. 5.

The few caterpillars which escape all the perils to which they are exposed, when full grown descend from the vines and loosely draw together a few fragments of leaves, bind them with silken threads, and within these rude enclosures change to chrysalids; often about or near the base of the vines on which they have fed. In this state they appear as represented in figure 5.

The chrysalis is of a pale brown color, dotted with black and with a row of prominent oval black spots along each side.

The perfect moth, which in due time bursts the bonds of this death-like sleep, appears in a beautiful garb of green. Its wings, (see figure 6), when fully expanded, measure about two and a half inches across, and are long and narrow. The anterior pair are of a dark olive green, crossed by bands and streaks of greenish-grey and shaded on the outer margin with the same. The hind wings are dull red with a patch of greenish grey on that part of the hinder margin nearest the body. The antennæ or horns are dull white above with a rosy tint below. The head and shoulder covers are deep olive green, the remainder of the upper surface of body pale-green, the under side dull grey.

The moth remains at rest during the day time, taking wing at dusk. Its flight is very swift and strong, and its muscular structure so powerful that when captured it will almost beat itself to pieces by its



FIG. 4.

constant fluttering. The insect is double brooded, the first brood of moths appearing on the wing about the middle of May, the second during August. The eggs are laid by the moths singly, on the under side of the leaves of the vine, and hatch in five or six days.



FIG. 6.

RIBSTON PIPPIN AND ROXBURY RUSSET.

BY REV. R. BURNET, LONDON, ONT.

How Ribston Pippin recalls the well remembered scenes of youthhood, when anything in the shape of fruit was agreeable whether or not it was first class. The "Ribston," however, has always been first class. No English apple perhaps has attained such universal approbation. In its characteristics there is presented to us the wide divergence there is in American and English tastes. In England acid and sub-acid apples, as a rule, are in great repute. In America the sweet and soft suit the majority of palates.

The Ribston has always stood in deserved favor with fruit growers on both sides of the Atlantic. Here it is brought into comparison with the Newtown Pippin, the Swaar, the Spitzenburgh, and even with the Baldwin. In the English market it stands the foremost among apples. Canadian and American grown apples of this variety bring the very highest prices at home. With us it has the drawback of water-coring, which is of itself a considerable qualification to its superior excellence. Around Hamilton it attains to great beauty, being large and handsome. Up Yong Street, in Markham, Scarboro', and Eramosa, it may be said to attain a monstrous size. In flavor it is faultless, and however large in size retains its shapely and symmetrical appearance, beauty in shape going hand in hand with excellence of flavor. Owing to the extent of our country, its season of ripening greatly varies. About Windsor, Mr. Dougall tells us it becomes a late fall variety. In the neighborhood of Owen Sound it retains its normal and winter period of ripening. Like all good, first-class apples, it is easily known: "Fruit of medium size, roundish, greenish yellow, mixed with a little russet near the stalk, and clouded with dull red on the sunny side." It is crisp, juicy, and sprightly. It fully ranks with any variety yet mentioned in these brief suggestive papers, and will amply repay the care of the husbandman. No collection, however small, should fail in having it represented.

The Roxbury Russet is an American Apple of the greatest excellence and value. It is often called the Boston Russet, and is a native of Massachusetts. While there may not be millions in it, yet it is most valuable as a market variety. It will yield as much money value as any known variety of apple. Its popularity is undoubted as it is unbounded. Ellwanger & Barry say that "its great popularity is owing to its productiveness and long keeping." It may be brought to market in June. The fruit is large, surface rough, greenish, covered with russet; the flesh is greenish white, moderately juicy, with a rich sub-acid flavor. Like its accompanying fellow-apple, the Ribston Pippin, it cooks well, and as well as it serves for winter dessert. In some portions of Canada, in the south and west of the United States, it too loses its season, and appears as a late autumn apple; mostly in our country, however, it retains its parental instincts, and delights the cultivator with its rich prices, almost within reach of the Early Harvest. Our duty to our fruit growers induces us to strongly recommend the cultivation of these two varieties. In all competitive tournaments they hold a first place, and woe betide the wight who has not secured their representation among his 10, 20, or 30 varieties. Few apples are more diffused, and few deserve diffusion more, than the Roxbury Russet.

Mrs. R. H. writes, "I have a fine young Orange Tree, two feet high, three years old, grown from seed. Will it bear flowers and fruit; if so, when?" It will, but no one can say when, save that it will when the tree has attained sufficient age or arrived at its maturity.

THE WINTER MEETING.

The winter meeting was held in the Council Chamber, Hamilton, on Wednesday, February 5th, 1879. President Burnet in the chair. After the usual routine business, the President called upon the Secretary to open the discussion upon the first subject, "Quinces, how to cultivate, and can they be grown with profit." The Secretary's views having been already given in the first volume of the *HORTICULTURIST*, at page 121, our readers will be the gainers if we lay before them Mr. P. E. Bucke's paper on this subject.

THE QUINCE

is a native of the south of Europe, (*Cydonia Vulgaris*.) and takes its name from Cydon, the modern Canea—the capital of Crete—near which place the tree grew in great abundance.

Three kinds are usually cultivated. First, the apple-shaped, known as the Orange Quince. This variety is of a rich golden color, very productive, and ripening in a less favorable climate than the other sorts. Second, the pear-shaped. Leaves long, ovate, downy beneath; fruit rather larger than the Orange, pyriform, or sometimes roundish, with a short neck, ribbed towards the eye, of a pale color, and ripening later. Third, the Portugal Quince. Leaves downy on both sides, but very downy beneath; the fruit of this variety is very large, measuring four inches in length and three to three and a half in diameter, skin thickly covered with a gray wool, beneath which is deep yellow. The flesh of this kind is more tender and juicy, and is better for every purpose than the other sorts. The tree is taller and more vigorous, but not so hardy, neither does it bear so abundantly; it is an exceedingly handsome tree, and is often planted in Europe for its ornamental appearance and the beauty of its flowers and fruit. It might stand our winters on the less exposed places along the banks of Lake Erie at its western end.

The quince propagates readily from cuttings and layers. Cuttings should be made like the rose or the currant, in the autumn, of wood of the same year, with a heel of the previous years growth; these may be set in the fall, or tied in bundles and buried eighteen inches deep in the soil, or kept in sand in a cool cellar and planted in the spring, and if watered in dry weather they will soon strike root; the best plants are obtained in this way, though not so quickly as by layering. This operation is performed in a similar way to the propagation of the Paradise Apple. The stem is cut off a few inches above the ground, and a number of suckers are then thrown up; the following year these are mounded up and readily strike root; in the autumn of the succeeding year they may be separated and planted out in rows. The stool will soon produce fresh suckers, which may be treated in the same manner.

The fruit ripens in the end of autumn, and should be allowed to hang on the trees until there is danger of frost. This fruit, though hard, does not keep from decay longer than a month or six weeks. It is principally used for a conserve by itself, but it is also added to flavor apple jam and jelly. In Michigan it is claimed that 300 bushels may be grown to the acre, the trees to be planted eight feet apart each way. This fruit readily sells there for \$2 per bushel and sometimes \$3. The trees yield regularly every year, and are not much trouble to grow. They have a considerable recommendation in that the trees bear early, that is from three to four years after they are set out. The tree, however, is not always hardy, nor do all soils suit it; as a rule it does best in a damp

location, and light sand is the worst soil for its cultivation. In entering into the cultivation of this fruit it would be best to plant a few at first, and if these succeeded more could be easily added, as they are so readily propagated, and there will be little expense in raising new trees. I am of the opinion that any locality suitable for the peach, in point of climate, would also answer for the quince; or at all events, well sheltered spots from northern winds would be suitable for the Orange variety, and this is the one usually grown in this country and the neighboring republic.

L. Woolverton, Grimsby, said he had confidence in the quince as a profitable fruit to cultivate, and is gradually working into it. He sent some to Guelph, and at first the consignee had some difficulty in disposing of them, but the demand has steadily increased at paying prices.

P. C. Dempsey, Albury, Prince Edward County: We cannot grow them in our part of the country.

P. E. Bucke, Ottawa: Quinces are sold in Ottawa at four dollars per bushel, and I believe it has not been sufficiently grown to meet the demand.

A. M. Smith, Drummondville, quite agreed with what the Secretary had said about high culture for the quince, that the fruit will be larger, and higher colored.

C. M. Honsberger, Jordan Station: I came here to listen to this discussion on the quince. It thrives well in my section, and I shall plant more largely of it, believing that it will pay as well as any fruit crop. The soil that I have selected for my quince orchard is a gravelly clay loam.

Thomas Beall, Lindsay: I live too far north to grow quinces. A few are brought to our market and sell at from eight to ten dollars per bushel.

Chas. Arnold, Paris: Cannot sell them, believe that a very few would be sufficient to supply the market.

A. McD. Allan, Goderich: But few are grown in Goderich, and these find a market there. They succeed best in clay loam, thoroughly drained, and manured with plenty of salt.

W. Roy, Owen Sound: I have the Portugal variety, it ripens very late, quite into October. Quince preserves is a very favorite article on all the ocean steamers.

Dr. Watt, Niagara: Would go into the cultivation very cautiously, fearing that the market might easily be overstocked.

“The best twenty varieties of apple for cultivation in Ontario.”

Chas. Arnold, Paris, read the following paper:

In expressing an opinion as to the best twenty varieties of apples, it is not likely that any two of us will agree, as each person will view the matter from a different stand-point, and we all have different tastes. Some of us have not ground for more than five or six apple trees, and yet are desirous of having at least twenty varieties of apples, in such cases the only way would be to graft several varieties upon one tree. I do not know of any twenty sets that would afford more pleasure than the twenty varieties of apples that I am about to name, or any twenty varieties that would be more profitable. Now, from my stand-point, the sorts which I will mention would be my twenty varieties, whether I were confined to five trees, with twenty varieties grafted upon them, or whether I had five thousand trees. In the latter case of course it would be necessary to know your place of marketing, and be governed by the likes and dislikes of that market, in regard to the number of the different varieties to be planted.

Many persons will, no doubt, be surprised at the large proportion of early apples

in my list, but I would ask, is there any more difficulty in shipping early summer apples to England than there is in shipping fresh meat? If thirty years ago, at a meeting of intelligent Canadian farmers, some one had predicted that in 1878 Ontario would ship half a million dollars worth of fresh meat to England, he would have been laughed at, and set down by some as a fit subject for a lunatic asylum; and yet such I believe has been done in the fresh meat trade of our country. And for my part, I see no reason why we should not have steamers fitted up for carrying beautiful, blushing, bright Benoni, Early Strawberry, Dora, and Gravenstein apples to Europe; and were I a young man I would not wish for a better speculation than planting fifty acres of land with the above named four varieties of apples. I speak from an experience of over twenty years, when I say that I always make more out of my early apples than my late ones. Not that I would advise any farmer who has a large quantity of grain to harvest to plant more than two or three trees of each of the above named early apples, unless he is prepared to plant quite a number, and then to look out for a market for them before they are ripe, and also to see that they are properly picked, and barreled at the proper time.

The following are my twenty varieties, placed in their order of merit:

Benoni, Early Strawberry, Wagner, Swayzie Pomme Grise, Beauty, Gravenstein, Ontario, Fameuse, Dora, Golden Russet, Red Astracan, Lady Apple, Spitzenberg, Moyle, Melon, Cox's Orange Pippin, Roxbury Russet, Pomme Royal, Ella, Northern Spy, Baldwin.

Linus Woolverton would prefer the following:

Benoni, Early Harvest, Sweet Bough, Red Astracan, Fall Pippin, Duchess of Oldenburg, Gravenstein, King of Tompkins Co., Lady Apple, Swayzie Pomme Grise, Golden Sweet, Esopus Spitzenberg, Fameuse, Baldwin, Greening, Golden Russet, Swaar, Northern Spy, Mann, Ribston Pippin.

A. H. Pettit, Grimsby, named the Early Harvest, Red Astracan, Gravenstein, Duchess of Oldenburg, King of Tompkins Co., Fall Pippin, Fameuse, Newton Pippin, Northern Spy, Baldwin, Swaar, R. I. Greening, Wagner, Swayzie Pomme Grise, Cayuga Red Streak, Lady Apple, Roxbury Russet, Golden Russet, Esopus Spitzenberg, Talman Sweet.

Jesse C. Moyer, Jordan Station, gave the following:

Early Harvest, Red Astracan, Duchess of Oldenburg, Chenango Strawberry, St. Lawrence, Gravenstein, Twenty Oz. (Cayuga Red), Fameuse, Fall Pippin, R. I. Greening, Wagner, Am. Golden Russet, Baldwin, Esopus Spitzenberg, Swaar, Pomme Grise, Swayzie Pomme Grise, Northern Spy, King of Tompkins Co., Talman Sweet.

Alex. McD. Allan, Goderich, said, my list is framed from actual experience in my section of country; I give it as such, and not as expressing my personal preferences. In compiling the list, consideration is given both to home use and commercial value.

Summer—Red Astracan, and Pinate; Fall—Fameuse, St. Lawrence, and Keswick Codlin; Winter—Northern Spy, R. I. Greening, Baldwin, Ribston Pippin, King of Tompkins Co., Twenty Oz. Pippin, A. G. Russet, Roxbury Russet, Esopus Spitzenberg, Hubbardston Nonsuch, Bourassau, Swaar, Wagner, Newton Pippin, Beauty of Kent.

P. E. Bucke named the following sorts for his section:

The Alexander, Red Astracan, Duchess of Oldenburg, Brockville Beauty, Grime's Golden, Gatineau Belle, Talman Sweet, Fameuse. Arnold's trees doing well, but have not fruited.

John McGill, Oshawa, gave the following list:

Summer—Early Harvest, Red Astracan, Sweet Bough, Benoni; Fall—Alexander, Gravenstein, Colvert, Fall Pippin, Chen. Strawberry; Winter—Baldwin, R. I. Greening, Ben

Davis, Spy, Yellow Bellfleur, A. G. Russet, King of Tompkins Co., Red Canada, Talman Sweet, Fameuse, Ribston Pippin, Wagner.

The President gave the following list:

Pomme Grise, Swayzie Pomme Grise, Green Newton Pippin, Rhode Island Greening, Roxbury Russet, Ribston Pippin, Esopus Spitzenberg, Northern Spy, Baldwin, Gravenstein, Golden Russet, Fall Pippin, Cayuga Redstreak, Norton's Melon, Swaar, Wagner, Peck's Pleasant, Seek-no-Further, Duchess of Oldenburg, Fameuse.

P. C. Dempsey, Albury, said Ben Davis does well with us, not of high flavor, but keeps until July, bears early, and continues to grow and bear; it is profitable. Montreal Pomme Grise sold in the Liverpool market for five dollars per barrel, and an extra sample brought forty-five shillings sterling. Bailey Sweet is valuable for the Edinburgh market.

Thomas Beall, Lindsay: We can only grow the more hardy varieties, such as the Red Astracan, Duchess of Oldenburg, St. Lawrence, Golden Russet. The Baldwin, and even the Snow cannot be successfully grown.

W. Holton, Hamilton, thought highly of the Ribston Pippin for cooking. The Ohio Nonpareil bears well, does not drop from the tree, and resembles the Gravenstein. The Perry Russet is a western apple that does well.

John Croil, Aultsville: The Fameuse never fails, but the fruit spots badly at times. St. Lawrence is very hardy and a fair bearer. Would also plant Golden Russet, Talman Sweet, Pomme Grise, Duchess of Oldenburg, Red Astracan, Seek-no-Further, Alexander, Early Harvest, McIntosh Red.

"The best twelve varieties of pear for cultivation in Ontario." This subject was introduced by the President with a very interesting and valuable paper, which will be laid unabridged before the members hereafter. He named the following sorts, placing them in their order of merit:

Bartlett, Beurre d'Anjou, Beurre Superfin, Beurre Bosc, Beurre Clairgeau, Louise Bonne de Jersey, Belle Lucrative, Flemish Beauty, White Doyenne, Sheldon, Lawrence, Winter Nelis, and Josephine de Malines.

L. Woolverton, Grimsby, would substitute Duchess d'Angouleme for the White Doyenne.

John McGill, Oshawa, submitted the following varieties:

Bartlett, Clapp's Favorite, Tyson, Flemish Beauty, Belle Lucrative, Louise Bonne de Jersey, Beurre Bosc, Beurre Clairgeau, Duchess d'Angouleme, Mount Vernon, Winter Nelis, St. Lawrence.

Alex McD. Allan, Goderich, would plant the following:

Doyenne d'Ete, Bartlett, Flemish Beauty, White Doyenne, Howell, Duchess d'Angouleme, Louise Bonne de Jersey, Stevens' Genesee, Seckel, St. Lawrence, Beurre Clairgeau.

W. Roy, Owen Sound, named for that section Flemish Beauty, Bartlett, Beurre Diel, Duchess d'Angouleme, Louise Bonne, Beurre Clairgeau, Glout Moreau, Graslin, Clapp's Favorite, Sheldon, Easter Beurre, Winter Nelis, Beurre Superfin, Beurre Bosc.

"The berberry, its value as a hedge plant and for fruit." A paper prepared by P. E. Bucke on this subject was read by the Secretary, Mr. Bucke having been obliged to leave.

THE BERBERRY

in its wild state is wide-spread in its growth, being a native of Britain, of Europe, and North America. It used to be grown in the hedgerows in England, but a popular belief was entertained that it occasioned a disease known as rust in wheat growing in its vicinity, and it was consequently entirely removed. It is now known that this was no mere superstition, but modern scientific investigation has proved that the berberry rust and wheat rust are the alternate generations of one species. That *Puccinia*

graminis and *Oidium berberis* are specifically identical, thus confirming the opinion held by farmers, but rejected as superstitious by most naturalists, except Sir Joseph Banks. The fruit has a pleasant acid, and is largely used in Europe for preserves and jellies. A celebrated conserve is made from a stoneless variety grown at Rouen, France.

Of the berberry proper there are four kinds, Common Red, Large Red, Purple, White. The stoneless is sometimes considered to be a distinct variety, and is propagated by layers, the others are usually raised from off sets or seeds, the latter method being usually practiced where large quantities are required, as for hedges, &c.

The berberry is an exceedingly hardy plant, withstanding the rigorous climate of Ottawa, which makes not the slightest impression on the smallest twig. In making hedges the plant need not be guarded from cattle, as they do not appear to relish it as an article of diet. As an adjunct to a board fence for the exclusion of boys from the fruit garden and the orchard, its thorny stems would be of great service. In the State of New Hampshire, where it has been extensively tried, it is considered the best hedge plant in America. The berberry grows best on a moist soil, but will do very well on a light sand, though it is not perhaps so vigorous there. The best way to prepare a hedge is to sow the seeds in a nursery, and afterwards plant out where required.

The berberry is a highly ornamental plant, both in flower and fruit. In early summer the graceful weeping branches are covered with the golden bloom, and in the autumn the shrub is ornamented with clusters of coral-like berries on long racemes, which remain attached to the boughs until the end of winter if not gathered. At the approach of frost the leaves change to an orange scarlet color, which greatly enhances the appearance of this beautiful plant. Besides being hardy, it is a very quick grower, is long lived, easily transplanted, and will stand cutting well.

(Concluded in next number.)

The Canadian Horticulturist.

VOL. II.]

APRIL, 1879.

[NO. 4.

THE WINTER MEETING.

(Continued from No. 3.)

DISCUSSION ON THE BERBERRY.

Thomas Beall, Lindsay, would prefer the Buckthorn as a hedge plant to the Berberry. The Purple Berberry was a very beautiful shrub.

No one present had ever seen the white variety mentioned in Mr. Bucke's paper.

"Which are the best ten native flowering trees and shrubs for ornamental purposes?"

Wm. Saunders, London, not being able to be present, sent his paper on this subject to the Secretary, who read it to the meeting. The varieties mentioned in it are the *Pyrus Arbutifolia*, Chokeberry; *Cornus Stolonifera*, Red Osier Dogwood; *Euonymus atropurpureus*, Burning Bush, or Spindle Tree; *Hypericum Kalmianum*, Kalm's St. John's Wort; *Cephalanthus occidentalis*, Button Bush; *Ceanothus Americanus*, New Jersey Tea; *Vaccinium Corymbosum*, Common or Dwarf Blueberry; *Ilex verticillata*, Black Alder or Winterberry; *Liriodendron Tulipifera*, the Tulip Tree; and *Prunus Serotina*, Wild Black Cherry. This valuable paper will also be given to the members in full in the Annual Report of 1879.

Chas. Arnold, Paris, mentioned the Witch Hazel and Highbush Cranberry.

W. Roy, Owen Sound, spoke of the *Hypericum Kalmianum* as a most beautiful hardy shrub.

President Burnet thought highly of the Sweet Chestnut, American Mountain Ash, and Witch Hazel.

John Croil, Aultsville, recommended the Black Walnut.

Doctor Wott, Niagara, admired our native thorns.

D. W. Beadle, St. Catharines, called attention to a species of native Crab Apple which grew in great abundance near Cayuga, which was very beautiful when in bloom.

"Should it be made compulsory by law to destroy the black knot on Plum trees?"

Vice-President Roy, Owen Sound, read the following paper on the subject:

This scourge of the plum tree is found in nearly all parts of Ontario, and is so common and destructive that in some districts one seldom sees a plum tree free from knot; and although a great deal has been written in agricultural and horticultural papers, and warnings given by vigilant members of both societies about the injury done to the fruit crop, and the sure death of the tree if not thoroughly cut off and burned, still the warning seems to be of little avail. The disease is spreading very fast,

and unless some remedy, either Legislative or otherwise, is found to stop its further progress, the plum crop will dwindle down to very small dimensions. When it gets into a plum orchard it attacks all varieties, but most frequently upon trees standing in wet dark rich soil. If the trees are planted in a dry soil they have a better chance to escape the disease.

Much has been said and written about the origin of black knot. The insect theory has long been abandoned, and nearly all intelligent fruit growers now accept the knot as a vegetable excrescence of fungous origin. Scientific research by entomologists and botanists has given us the cause, nature, and means of propagation of the black knot; it is for us to profit by their instructions, and endeavor by every means in our power to put down and destroy this pest.

It spreads with great rapidity. I lately saw a blue plum tree affected with black knot, and large numbers of suckers growing up all around it; nearly every one of them from a foot high was affected with knot, evidently showing how contagious and hereditary it is; hence the necessity of strong measures being taken to keep it down; what these measures should be is for you to say. From my own observation and experience, I have not much faith in moral suasion in this matter. If you think the evil can be eradicated by act of parliament, and proper machinery put in motion to compel every one to keep their trees free of this ugly and injurious excrescence, it will be a benefit to the community, and put our people largely in possession of a most delicious and nourishing fruit, with millions of bushels surplus for export, which will be real wealth to the country.

There is a Bill now before the Ontario Legislature, in charge of the member for North Grey, which received a first reading about the end of last session. I think it will be well for this meeting of the Fruit Growers' Association of Ontario to take the matter into consideration, and see if any improvement can be made on the Bill. It might include Choke Cherries and Wild Cherries, both very subject to black knot, and which have a tendency to spread this very contagious disease if growing near a plum orchard. The Curculio might also form part of the Bill.

The Secretary read the Bill now before the Legislative Assembly, and after considerable discussion the following resolution was passed unanimously:

“Mr. Roy having read a paper on the black knot on plum trees, and having submitted a Bill, now before the Legislative Assembly of Ontario, for the prevention of the spread of black knot, we hereby agree to endorse the sections of such Bill, and desire to strengthen Mr. Creighton's hands by instructing our Secretary to correspond with the introducer of the Bill, and assure him that it is entirely in accordance with our views, and respectfully suggest that the provisions be extended to Wild Cherry and other trees subject to this disease.”

“Are there any varieties of Blue Plums specially valuable for cultivation in Ontario?”

P. C. Dempsey, Albury, said there was in his section a little plum which was raised from a stone of the Peach Plum, which ripens very early. Another variety that ripens after this, a sort of Damson, abounds in that part of the country. It is found growing in fence corners for miles. The fruit ripens after the flush of autumn fruit and sells on that account for more than the best cultivated sorts. The tree has a spreading habit, and the fruit keeps well. Yet another sort originated in the grounds of a neighbor, which does not ripen until frost comes, and sells at very high prices because all others are gone, though it is but of third quality.

A. M. Smith, Drummondville, mentioned a variety of blue plum, that is grown in the County of Lincoln, a most abundant cropper, constant bearer, and very profitable. The origin of this plum is not known. The trees now existing were propagated from a tree that has been dead some five years, and must have been all of fifty years old when it died. It was standing on the farm of one Andrew Baker, now deceased, when he sold it to Isaac Wismer, about forty years ago, and which farm is now owned by Jacob H. Moyer. There is now about a hundred trees of this variety growing on Jacob H. Moyer's place, raised from suckers of this old tree. It was a late ripening sort, sold well, and proved to be a very profitable plum.

"What measures can be adopted to prevent the spread of the yellows in the peach?"

The subject was introduced by an exhaustive paper from Linus Woolverton, Grimsby, and such is the importance of the subject that we publish it now instead of reserving it for the Annual Report.

WHAT MEASURES CAN BE ADOPTED TO PREVENT THE SPREAD OF THE YELLOWS IN THE PEACH?

Before we can successfully interest ourselves about the measures to be adopted for preventing the spread of the yellows in our country, it is necessary to consider the extent of the interest affected, and also the nature of the disease itself as far as this is known.

The peach growing interest of Canada is yet in its infancy, but it is rapidly assuming large proportions in those districts favorable to its cultivation. Of course we cannot expect ever to see in Canada such orchards of peach trees as may be seen in Delaware, Maryland, and some other States, where the peach finds a more congenial climate, and where a single orchard sometimes extends over hundreds of acres; but during the last five years a great impetus has been given to this industry, and orchards may now be seen dotting the shores of lakes Huron, Erie, and Ontario, wherever the ameliorating influence of the water is united with a suitable soil, and a winter that is not too severe. The Niagara peninsula is peculiarly adapted to peach culture, and on it the largest orchards may be found; indeed it is no uncommon thing now to find an orchard there of two or three thousand peach trees, and near Niagara Falls there is one of about ten thousand. As a rough estimate, we may safely assert that the number of peach trees now standing in Canadian soil exceeds one hundred and fifty thousand. Of course a large number of these having been planted during the past three or four years, have not yet begun bearing; but already our people are beginning to appreciate home production in this article. It is found that the native grown peach reaches the consumer in a fresher condition; and that Canadian growers naturally send their best into market, while distant shippers, after selling their best in their own cities, send into Canada their inferior fruit. Furthermore we venture to affirm that no finer Crawfords are grown anywhere than are produced on the sandy loam skirting somewhat irregularly the south shore of Lake Ontario.

It is evident therefore that any disease that threatens to destroy this interest, in which many have now invested almost their whole capital, and in which their prospects of success in life are largely bound up, will not only result in terrible disappointment and misfortune to such persons, but will prove an incalculable loss to the general public of our country who are the consumers of this delicate luxury.

THE NATURE OF THE YELLOWS is about as mysterious as that of the famous pear blight, and it is useless to dogmatise upon the matter. T. A. Fulton, in his *Peach Culture*, suggests that it is a case of *arbor consumption* arising from a deficiency in the

supply of tree nourishment; and he thinks that it first originated in bad cultivation. Of course it is a principle in agriculture that a rotation of crops should be observed, lest a degeneracy of the soil result from a constant extraction of one kind of plant food. It is also a matter of history, that the yellows first appeared to any considerable extent in the middle States, where peaches had been cultivated largely for a long period, where new orchards had replaced old ones, and where grain crops had exhausted the already too impoverished soil.

The disease once abroad in the land, plenty of means were at hand for spreading and propagating it. That it is *contagious* seems proved by the experience of planters, who observe that when it once breaks out in an orchard, and the affected trees are left standing, it is sure to spread. Nor will it confine its ravages to the one orchard, but may extend in a few seasons throughout a whole district.

The theory that it is also *hereditary* is confirmed by an observation of facts. It has been found that trees grown from the pits of diseased fruit will produce sickly trees, which condition the best care and cultivation will not wholly overcome. And this explains the strange instances quoted by Downing, of orchards in which the yellows has broken out in spots, affecting trees not contiguous to each other. We make the following extract under this head from that author's *Fruits and Fruit Trees of America*: "It is established beyond question, that the yellows can always be propagated by budding or grafting from a diseased tree; that the stock, whether peach or almond, also takes the disease, and finally perishes; and that the seeds of the diseased trees produce young trees in which the yellows sooner or later breaks out."

There are two or three infallible indications of the existence of the yellows in a peach tree, and among these may be mentioned,

(1) *The premature ripening of the fruit.* This will be the first observable symptom, and should the tree survive for two or three years, each recurring season will witness a still earlier time of maturity. This symptom may be to a certain extent counterfeited by the work of the larva of *Aegeria exitiosa*, which girdles the tree just below the surface of the ground, and which also may prove the death of it. But to the experienced cultivator the next symptom will be unmistakable, viz:

(2) *The spotted fruit.* Whether naturally yellow or purple, the fruit of such trees as are affected with the yellows is invariably dotted with purplish red spots; while the flesh is highly colored about the pit. Such fruit is sometimes shipped into our country in large quantities to be sold to the uninitiated, and the people of our towns and cities should be on their guard against it, for it is insipid and worthless. There is one more symptom which may be depended upon as unfailing, and that is

(3) *The appearance along the branches of long slender shoots, bearing small narrow leaves.* These leaves are usually of a yellowish color, from which characteristic we have the name of the disease.

Among the measures to be adopted by peach growers to prevent the spread of the yellows, we may mention, (1) *the use of the greatest caution in the purchase of both pits and trees.* Not only should the pits of natural trees be chosen for propagating, as possessing most health and vitality, but they should be gathered from trees that are themselves vigorous and healthy, lest a deterioration be setting in which may prove to be the beginning of troubles. By all means should pits be avoided by the planter that have been grown in districts where the yellows are known to prevail; and surely the ominous words sometimes seen in advertisements of pits for sale, viz, "Warranted free from the yellows," should be warning enough to lead the

buyer to make sure in this matter.

As for the trees themselves, since they do not exhibit any indication of disease until sometime planted, the buyer needs to enquire carefully into their nativity, and he must not buy from those sections where the yellows is known to exist, or he may be assured that he is bringing pestilence into his orchard.

Another source of danger may be overlooked, and that is the *importation of diseased fruit*. Such fruit would be cheap, and therefore the very kind naturally purchased for canning by those unacquainted with its condition; and from these the pits would in many instances find their way into the hands of some planter. Is there any way to prevent such fruit from being brought into our country? Indeed, it is an open question whether government aid ought not to be petitioned in this matter. A rigorous quarantine is observed by our country against diseases of man; England has an Act prohibiting the importation of diseased cattle, and if the diseases of man and beast may thus be guarded against, why may not something similar be done to save our country from this terrible disease of the peach orchards?

The next preventive measure in the hands of the peach grower, after a careful selection of his trees, is (2) *the vigilant outlook for the first appearance of the disease in his orchard*. As soon as he is assured of the first certain indication of its presence, the orchardist must take immediate action. He must cut out the affected tree, root and branch, and destroy it with fire.

The best means of overcoming any tendency to this disease in an orchard is probably (3) *good cultivation*. As in the case of the human system, consumption is warded off by attention to the rules of health, so will any means that will stimulate the healthy and vigorous growth of the peach tree aid in warding off this disease. No planter should set more trees than he can cultivate well, for no tree sooner shows a stunted growth from lack of attention of this kind than the peach tree. Indeed, we believe that except on very light soils twice each year would not be too often for the soil to be thoroughly worked up by the use of the plough and harrow; and for this work the months of May and October may be pointed out as most appropriate.

We also believe that (4) *the shortening in system of pruning is very useful*. We have observed that in our own orchard trees so treated live longer, and seem more healthy and vigorous than those allowed to make long and slender growth; and it is also a subject of remark that this is the method largely practiced on the peach trees in England, and there the yellows has never yet been known to occur. It is a great deal of trouble it is true, especially in large orchards, but "Whatever is worth doing at all is worth doing well," and this should be a very important motto to the fruit grower. And indeed the work is not so laborious as might be supposed, if only the proper tools are brought into use: a good pair of pruning-shears for young trees, and a Water's tree-pruner for larger ones, will do a great deal of execution in a day, and amply repay the trouble in the increased thrift and vigor of the trees so treated.

(5) *Wet land should be underdrained*. Nothing will sooner impair the vigor of the peach tree than water standing about its roots; and a low state of health will predispose the tree to an attack of the yellows. A complete system of tile drains will therefore not merely pay in the increased yield of fruit, but may help largely in warding off the great enemy that threatens such wholesale slaughter of the orchards themselves.

(6) *Use plenty of fertilizers*. Ashes, lime, and manure may all be used with success in the work of increasing the vitality of the peach tree, and so enabling it the better to repel disease. It is even thought that in cases where a tendency only to disease has

manifested itself, an entire renovation and cure of the tree may be hoped for through the use of judicious fertilizers, united with careful cultivation and pruning.

(7) *Grain crops must not be grown about peach trees.* This unwise course has been pointed out by Mr. Downing as among the probable causes of the devastation caused by the yellows in the middle States, about the year 1814. And certainly we shall be on the safe side if we avoid totally what is acknowledged to be an evil in any orchard.

We would also suggest that in every peach growing section (8) *a committee be appointed*, of men acquainted with the nature and symptoms of the yellows, whose duty it shall be to make annual visits to any orchards supposed to be infested, and to point out to the respective owners any cases of yellows they may find, advising the immediate eradication of them; nor would we stop there, but would advocate the enacting of a law by the Legislature, by which the said committee, or an inspector appointed for the purpose, might have the power to enforce the cutting out of all such trees. This may seem to some a superfluous course, but so would it seem in the case of the Canada Thistle, yet we all know how often these are neglected, to the disgrace of many an otherwise fine farm; so that, plainly it is sometimes found necessary to compel a man by law to take those steps for his own welfare, which either his lack of common sense or his indolence lead him to neglect for himself.

In conclusion, we believe that the most effective measure we can take, as an organized association, to prevent the spread of the yellows, is to *distribute as widely as possible reliable information upon the subject*; for unless one knows how terrible is his enemy, weapons of defence will lie unused. It requires a mind determined by powerful motives, to cut down a beautiful peach tree that has just reached an age of maturity, and is only beginning to repay several years of careful cultivation. But it is evident, for example, that a knowledge of the contagious nature of the disease, by which not one, but many fine trees may soon be affected, will lead any sensible man to choose the lesser of two evils and exterminate the sick tree, root and branch.

And we trust that, as an association, we are giving no uncertain sound in thus warning the people against a threatening danger that has already in parts of Michigan totally ruined the prospects of peach growers, and cleared the land of a once flourishing and profitable industry. And further, we hope that no measure suggested will be left untried to prevent the spread of that much dreaded disease of the peach, commonly known as the yellows.

A. M. Smith, Drummondville, had been corresponding with fruit growers in New Jersey, Delaware, and Michigan on this subject, and their testimony was to the effect that the disease was contagious, that even pruning a healthy tree with the knife that had been used on a diseased tree would communicate the disease, and that the only hope lay in legal enactments requiring the destruction of all diseased trees.

After considerable discussion on this subject, it was unanimously resolved: "That it is desirable that the Bill now before the Legislative Assembly relating to black knot in the plum tree, be so amended as to provide for the digging up and burning of all peach trees affected with the yellows"; and the executive committee was requested to endeavor to have the Bill so amended; or if that was not expedient, to have a Bill introduced that should make it the duty of some suitable officer to cause all peach trees affected with the yellows to be immediately destroyed.

It was also resolved that a petition, signed by the President and Secretary on behalf of the Association, be presented to the Dominion Parliament, asking that an Act may be passed at

this session authorizing the Governor in Council to issue an order at any time preventing the importation of peach trees, peach stones, and diseased peaches, from countries where the disease exists.

P. C. Dempsey called the attention of the Association to the manner in which the present duty upon fruit imported into Canada was practically evaded, and introduced the following resolution:

“Whereas, there is now an *ad-valorem* duty upon fruit, and whereas this form of duty admits of great frauds being perpetrated, not only upon the revenue, but also upon the fruit growers of Ontario, therefore resolved, that this Association recommends to Government that the duty upon fruit be changed to a specific duty.”

Considerable discussion ensued, tending to shew the necessity of some change in the duty on fruit, so as to prevent frauds upon the revenue, and to give to the fruit growers of Canada the benefit of the incidental protection which the duties on fruit should afford; and the resolution was carried unanimously.

There was a considerable display of fruit, mostly apples, in relation to which the fruit committee brought in an appropriate report.

It was resolved that the Directors be authorized to arrange the next Winter Meeting for a two days session.

The Summer Meeting will be held this year in the Town Hall, Peterboro', and the Autumn Meeting in the Town of Walkerton.

THE BEACONSFIELD GRAPE.

We have received a letter from Geo. F. Gallagher in reply to our article in the February number. A considerable part of his letter is devoted to remarks about the Editor, but as these have nothing to do with the question whether the Beaconsfield is identical with the Champion, we omit them. That portion of his letter which treats of the grape vine is as follows:

Editor "Canadian Horticulturist."

Dear Sir:

The February number of your magazine has just come under my notice. I observe you have devoted several of your pages to a consideration of the merits of the grape vine which we have named and copyrighted "Beaconsfield."

In the first place you say we have claimed the "Beaconsfield" as grown from seed at Rochester. Well, we repeat it, and challenge you to disprove it. Next you say that several nurserymen at Rochester have never heard of it, and are confident "no grape of that name could have been extensively cultivated at Rochester without their knowledge." That is the case exactly, and just what we have claimed. The "Beaconsfield" has not been extensively cultivated at Rochester, and consequently it is not at all surprising that several nurserymen there should have not seen it; in fact it would be very strange if they had, especially under that name, as it was only lately given the distinctive name of "Beaconsfield" by our firm, from want of a better one to call it. Again, these nurserymen are made to say the description given in our circular was closely that of the "Champion" grape. Allow me to remark that the "Champion" and the "Beaconsfield" differ very materially in their leading characteristics.

"Mr. Gallagher," you say, "introduced the 'Beaconsfield' to Mr. Menzies as the 'Champion.'" I don't deny this, or that this particular vine went by the name of Champion, for want of a better and more defined one, for I presume you are aware there are Champions and Champions. Then you say I have been a tree dealer and agent since I was seventeen years of age, and the slur intended is quite apparent. For your information I will say that I have been in business for myself ever since the age of seventeen, and my business record either at Rochester or elsewhere will stand investigation.

When you were informed that I bought in the spring of 1877 a quantity of Champion grape vines at Rochester you were correctly informed, and if you had been informed that I had at the same time obtained the vine which we have since named the "Beaconsfield," your informant would not have been half so untruthful as are your unwarrantable conclusions. You are further informed that we have not raised young vines enough to supply the 4,000 which Mr. Menzies says he intends to plant during the coming spring, and that all the vines we sell of it for planting in the spring of 1879 must come from Rochester. This, Mr. Editor, is a cheeky assertion on the part of your informant, and is devoid of truth.

The vine which for the protection of ourselves and our customers we have copyrighted the "Beaconsfield," bears no more resemblance to the *Champion* than it does to the *Hartford Prolific*. I have made large claims for the success of the "Beaconsfield" vine, and believe I am not going to be disappointed. I claim it is a superior vine to any known for this part of Canada, and I am going to be here to take the consequences of any promises I make in regard to it. If, believing as we do, that it

is the best vine, we wish to charge more for it than is charged for other varieties, the public can very well be left to take care of itself in the matter, as we are making no inducements which are not going to hold out. Our price is \$500 per thousand, but if the public desire to buy other varieties from Rochester or elsewhere, at higher or lower prices, they are quite at liberty to do so, but if they are willing to pay more for what we claim is a better article than is asked for a poorer one, surely they have an undoubted right to do so.

Yours truly,

GEO. F. GALLAGHER.

Our correspondent states that in the spring of 1877 he "obtained *the vine* which we have since named the Beaconsfield." Mr. Menzies, however, says (see page 28) that it was not *a vine*, but 2,500 vines of the Beaconsfield, then called Champion, that he planted in the spring of 1877; so that this vine, called the Champion in 1877, had been cultivated by some one near Rochester in sufficient quantity to be obtained by the thousand. Mr. Gallagher does not say that he bought up the Champion *alias* Beaconsfield, so as to secure the control of the entire stock, hence it is quite possible that the person from whom he procured these 2,500 vines may have some of the same sort left, and which he may now have for sale.

Perhaps the following quotations from a letter received from Mr. J. S. Stone, of Charlotte, near Rochester, N. Y., may throw some light on the source of supply. He says, "by referring to my books I find I first sold to Shanley & Gallagher, (this being the name of the firm at the time),

In	April, 1873,	124	two year old	Champion vines.
	" 1875,	430	" "	
	" 1876,	300	" "	
	" 1877,	3500	one, two, and three years old.	

"S. & G. had vines of me in 1874, but memorandum is not at hand, cannot state the number."

Again, Our correspondent says, "the Champion and the Beaconsfield differ very materially in their leading characteristics," but does not state in what that difference consists. Mr. Menzies describes the Beaconsfield thus, "ripening fully between 25th of August and the 5th of September. It is very prolific, and of rapid growth; the fruit is large, of a dark purple color, sweet and luscious." Mr. Stone, in describing his Champion, says, "it has proved to be the earliest good grape yet introduced. The fruit is large, black, and fine looking, and of a good quality, ripening from ten to twelve days earlier than the Hartford Prolific with the same exposure; the bunches are large and very compact; picked and marketed before any other good variety is matured. The vine is a very vigorous grower, and very hardy." James Hall, late Sheriff of Peterboro', writes to Mr. Stone: "My Delawares are scarcely ripe now, Sept. 11th, and the Champions had from you were ripe a fortnight ago." James Hoosac, residing near Cobourg, writes to Mr. Stone, "The Champion grape vine I procured of you fruited five full grown bunches, and were ripe on the first of September, two of which were awarded the first prize for black grapes at the Cobourg Horticultural Exhibition." We are also informed that Mr. L. W. Decker, of Montreal, had fruited this Champion before 1877. and that it was largely owing to the information received from Mr. Decker that Mr. Menzies decided to plant it largely. Our readers are now in a position to judge for themselves whether the Beaconsfield and this Champion differ materially in their leading characteristics.

It now remains for our correspondent to give the information which would throw a flood of light on this subject—information which so far has been entirely withheld, and which he can give if he chooses, by telling the public from whom he procured the 2,500 vines planted by Mr.

Menzies in the spring of 1877, then called Champion, now called Beaconsfield. If they were procured from Mr. Stone, we can tell our readers that he has some of the same sort yet, which he will sell at fifteen dollars per hundred.

HORTICULTURAL JOTTINGS DURING A RECENT TRIP SOUTH.

BY WM. SAUNDERS, LONDON, ONT.

Journeying southward, New York was reached early on the 16th day of November, when a visit long anticipated with pleasure was resolved on, to the well-known establishment of Mr. George Such, at South Amboy. About an hour's railway ride brought me to this quiet little town, of some three or four thousand inhabitants, half way between New York and Long Branch. Mr. Such's place is about two and a half miles from the town, in a barren looking district, reached by a road cut through the woods. On arrival, the obliging foreman, Mr. Taplin, very kindly conducted me through the houses. He has an immense collection of rare things, very many of them never seen before by the writer; but as very few of the plants were in flower, the visit was a less interesting one than it would otherwise have been. Still there was very much to enjoy. Pitcher Plants, (*Nepenthes*,) were to be seen in almost endless variety, some of them with their graceful pitchers beautifully marked. Many of these were new seedlings, raised by crossing some of the older varieties, in which work Mr. Taplin has been very successful.

The collection of Orchids is very extensive, embracing an immense number of species, to which constant additions are being made. There were several of them in bloom, amongst which *Odontoglossum grande* is deserving of special mention; the *Cypripediums* were also attractive; *niveum* has very pretty foliage; *Roezlii* was in bloom, and a beautiful thing it was, with its bright colors and curious form; and there were large masses of *insigne*, with a profusion of flowers and flower buds.

Among the Ferns and Palms there were many that were graceful beyond description, while the collection of Crotons was truly magnificent. There was an immense show of Double White Camellias on very large and healthy looking bushes; *Eucharis Amazonica* was in bloom with its delightfully fragrant flowers, while *Lapageria rosea*, with its exquisite bell-shaped deep rose-colored blooms hung over head. *Passiflora princeps*, is a fine deep-red Passion Flower, a vigorous grower and profuse bloomer, and one which will succeed very well in a cold house, provided the temperature does not get lower than from 45° to 50°. An immense *Stephanotis* covered a large portion of the roof of one of the houses, and must be worth travelling a long distance to see when in bloom. But in such a hurried visit, with so many things to admire, the profusion was perplexing, and one could only wish that a place with so many charms was nearer home, so that it might be oftener visited.

On the grounds outside there were also many interesting things. The collection of Japanese Retinosporas was very fine, many of the specimens being from five to six feet in height, and strikingly beautiful in form and foliage. There was a thrifty looking row of *Eulalia Japonica* in bloom, with its many graceful plumes waving in the breeze. Some of the walks were prettily margined with the Japan Golden Leaved Honeysuckle, and others with *Euonymus radicans variegata*, both of which seem very suitable for this purpose, as they bear clipping well, and form very dense, neat, and beautiful margins. A place so attractive in early winter must be a perfect paradise in the summer season.

The 20th and 21st were spent in Philadelphia, where, under the guidance of Mr. C. H. Miller, landscape gardener at Fairmount Park, I was privileged to see the many improvements which have been made in that beautiful place since the memorable exhibition of 1876. On visiting Horticultural Hall one is at once impressed with the change which has taken place in the interior

of that handsome building, consequent on the luxuriant development of the beautiful Palms, Tree Ferns, and other exotics during the past two years. Many of the specimens are now truly magnificent, and occupy so much space that others of lesser moment have gradually been removed.

In the grounds surrounding the hall the change is even greater; some portions have been and others are now being entirely remodelled. There was so much hurry and rush in preparing for the great exhibition that it was scarcely possible to carry out any well digested plan, and hence space was given to different nurserymen and florists to decorate as they thought best. Now, the whole is being worked up in a systematic manner; plants, shrubs and trees belonging to the same families arranged in groups in their natural order, great care being given to selecting those locations where each will show to the best advantage. In one section there is a large Pinetum where all the *conifera* are being grouped, in another the Oaks find a place, and so on with the various species of Ash, Birch, Beech, Maple, &c. A similar arrangement is also being carried out with the herbaceous plants, the *Ranunculaceæ* are in one section by themselves, and so with the *Compositæ*, *Cruciferaæ*, &c. But since in some of the families the plants comprising them are inconspicuous, it has been found necessary to introduce occasionally for the sake of effect a group of flowering shrubs or evergreens to relieve what would otherwise become monotonous. Hence there is in these instances a sort of double plan, but this will not be a matter of inconvenience as it does not interfere with the natural grouping of the different families. There are also some prominent points which are necessarily devoted to purely ornamental purposes; these are filled in season with bedding plants of various sorts; and with a view to producing permanent effects the year through a number of the beds are supplied with groups of the most beautiful evergreens, especially the *Retinosporas* and some of the prettiest of the *Arbor Vitæ* and *Junipers*, the interspaces being filled with bedding plants in summer. This method of planting possesses many advantages, since it makes the beds attractive at all seasons of the year. In some of the beds in prominent places *Azalea amœna* is much used; here it grows to be a shrub of considerable size, and is perfectly hardy; its fine masses of brilliant flowers are said to be particularly attractive in spring. There are also large masses of *Rhododendrons* grouped in some portions of the ground, which must present a magnificent spectacle during that portion of the summer when they are in bloom.

In all departments an immense amount of work has been done during the last two years, and at the time of my visit planting and transplanting were proceeding most vigorously.

SAUNDERS' HYBRID RASPBERRIES.

BY CHARLES ARNOLD, PARIS.

When discussing the question of "What varieties of Raspberries are succeeding well?" at our summer meeting in St. Catharines, I find, on page 29 of our last year's Report, I am represented as saying "The Saunders' Raspberry has given very poor satisfaction." This, Mr. Editor, is a great mistake. Substituting the word *good* for the word "*poor*" in the Report, might make it correct. I certainly could not have said anything bad about them last year, for when growing by the side of Mammoth Cluster, Philadelphia, Clarke, and several other old varieties, several of Saunders' Hybrids were more productive and better flavored than Philadelphia, and certainly equally as hardy as any variety grown.

We regret the error mentioned above should have appeared in our report of the discussions. It arose from a misunderstanding of Mr. Arnold's remarks, and we distinctly remember the feeling of disappointment experienced by us at what we supposed him to have said, and it is very gratifying to learn that these new hybrids which possess so many points of interest are likely to prove valuable sorts.

The Canadian Horticulturist.

VOL. II.]

MAY, 1879.

[NO. 5.

ON THE STUDY OF BOTANY.

BY GEORGE MILL, WARWICK, ONT.

In every part of the world mankind depend on fruit trees or the herbs of the field for subsistence to a considerable extent. Plants furnish us with a large part of our clothing, and the principal ingredients of our *materia medica*. Architecture, the mechanical arts, navigation, and almost every branch of industry depend either directly or indirectly on the products of the vegetable kingdom.

As might be supposed, plants, shrubs and trees have been studied by men of intelligence and observation from the earliest times to the present day. In the Holy Scriptures we are told that Solomon “spake of trees, from the cedar tree that is in Lebanon even unto the hyssop that springeth out of the wall;” and “a greater than Solomon” exhorted His followers to “consider the lilies of the field, how they grow.”

Among the ancient Greeks we find that Hippocrates, about the year B.C. 409, introduced an enlightened system of medical study, connected with the study of plants. Aristotle, about B.C. 350, wrote a learned work on plants; and his disciple, Theophrastus, about B.C. 300, wrote on the same subject, and described nearly 500 species. The principal botanical writers among the Romans are Pliny the Elder, and Dioscorides, who both flourished towards the end of the first century of the Christian era. In the *materia medica* of Dioscorides about 700 plants are described, and the greater part of our old English herbalists are made up from his writings.

From the time of Pliny the Elder and Dioscorides to the end of the fifteenth century we can say nothing on the state of botany, as history is almost silent on that subject. At the beginning of the sixteenth century Brunfelsius, a German, published a work called *Historia Plantarum*, which was illustrated with wood-cuts. Although this was quite a step in advance of former writers, yet there was no attempt at classification, without which no branch of natural history can be studied with advantage. The first attempt at arranging plants into classes, orders and genera, was made about the middle of the sixteenth century, by Gesnor, a native of Switzerland. Towards the end of the seventeenth and beginning of the eighteenth century, various systems of classification were proposed in different countries. Tournefort, a Frenchman, whose system depended in a great measure on the corolla, was followed until it was found impracticable. Linnaeus, the great Swedish naturalist, founded what is called the sexual or artificial system of classification. Although this system is by no means perfect, yet it still holds its ground and has been the means of making the study of systematic botany so fascinating to all classes of people, from the prince to the peasant. A somewhat different, and on the whole a superior

method of arrangement has been adopted since the time of Linnaeus, called the natural system. This system takes a more extended and philosophical view of the relations of plants than the system of Linnaeus, and groups them together according to the relationship which plants bear to each other in every part of their structure. A. L. Jussieu, of Paris, may be considered the founder of this system. It has been improved to some extent by Professor De Candolle, of Geneva, and also by Professor Lindley, of London. At the present time, Professor Lindley is our highest authority, both in systematic and physiological botany.

It is scarcely possible to overrate the importance of botany to the horticulturist. The structure and functions of the roots, stems, bark, flowers and leaves must be pretty well understood before we can give sufficient reason for preferring one mode of cultivation to another. There may indeed be a certain measure of success in the different operations of horticulture where there is no acquaintance with vegetable physiology. In like manner the nostrums of a quack, who knows nothing of the structure of the human body, will sometimes be as efficacious as the prescriptions of a scientific medical practitioner. Still it is generally admitted by people of intelligence that a knowledge of anatomy is necessary for medical men, and also that a knowledge of physiological botany is necessary for horticulturists. This is an age of scientific investigation, therefore dogmatical assertions and empirical rules will not be accepted in horticulture nor anything else. Results must be traced up to causes, and reasons given that will bear close examination.

It is probable that the numerous diseases of fruit trees principally originate in a partial derangement of some part of the tree, consequently if we were sufficiently acquainted with the laws of vegetation we might in a great measure be able to *prevent* these diseases. In speaking of the diseases of plants we generally confine our attention to the agents which produce the diseases, such as aphides, fungi, &c., but it would be well to keep in mind that there are certain conditions in plants, as well as in animals, which render them subject to the attacks of diseases, and just in proportion as we are able to control these conditions we will be able to prevent diseases in plants and trees.

Even as a branch of education to young people of both sexes, the science of botany is invaluable. A botanical ramble in the fields, for the purpose of collecting specimens, or a comparison of the differences and affinities of one species, or one order with another, has a tendency to call into exercise and improve the faculty of observation. When this faculty is wanting, a person will be blind to the works of creation, and unable to derive any pleasure or instruction from the wonders by which he is surrounded. Of such a person it may be truly said

“A primrose by the water brim,

A yellow primrose was to him,

And it was nothing more.”

The admirable method of classification in the natural system of botany, drills a young person into systematic habits in other kinds of study. Every one has observed how readily an orderly thinker can master a subject, and also convey information to others, compared with one whose ideas are confused. In the study of botany a person has an inexhaustable fund of refined enjoyment and instruction.

“Not a plant, a leaf, a flower, but contains

A folio volume. We may read, and read,

And read again, and still find something new—

Something to please, something to instruct

Even in the noisome weed.”

A well known gentleman connected with the Fruit Growers' Association has communicated to the writer of this paper the pleasant intelligence that there is a strong desire among certain parties in this Province to have a botanical society. There are no doubt many botanists through

the country who would be glad to make the acquaintance of one another, if it could be done. As a means of accomplishing this desirable object, Mr. Beadle, the Secretary of the Fruit Growers' Association, has kindly consented to receive the names and addresses of all parties wishing to form a botanical society. These names will be published in, or on the covers of the CANADIAN HORTICULTURIST, so that it may be ascertained how many are in favor of a society, and also in what parts of the Province they reside. It is to be hoped that all parties who know anything of the science of botany, and who wish to have a botanical society formed in this Province, will send in their names to Mr. Beadle without delay. As one of the principal objects of such a society would be to promote the scientific study of plants, young people of both sexes who have any taste for botany would find it quite an advantage to study in connection with an energetic well managed society.

THE QUINCE.

BY EBENEZER DAY, ELORA.

At the last meeting of the Fruit Growers' Association I notice the statement that the quince will grow where the peach will. As some of our members would like to try it, I will give my experience. Some four or five years ago I planted a tree of both quince and peach, more to test their hardiness than in the expectation of seeing them fruit. The quince has received no damage whatever from frosts, and last year it fruited for the first; the year before, it blossomed but did not fruit. The tree was sold to me for Rea's Mammoth. The peach I bought as the Foster; it blossomed the first year I planted it out, but has not since. In the beginning of September of each year I cut it back, leaving from eighteen inches to two feet of the year's growth, but every spring it has been frozen back to within a few inches of the trunk; it makes from three to seven feet growth each year. Both are grown in open ground. Several parties here have tried the peach, but have had no better luck than myself. Don't know of any that have tried the quince, but think that if protected by a house or a close board fence from the north and west, there is not any more difficulty in fruiting the quince than the apple.

PEACHES.

BY R. HODGINS, ST. CATHARINES.

Having for the last twenty years been a close observer of events in the St. Catharines market, and being especially interested in the kind, quality, and quantity of the fruits offered for sale, I desire to say a few words about peaches, which will, I trust, be interesting to parties who are just now reminded that the season for planting trees is at hand.

About twelve years ago I obtained from the St. Catharines Nurseries a few Early Crawford peach trees for my garden in this city; and from the first year they commenced bearing up to the present time, these trees have not missed a single season in yielding fruit. Last autumn the peaches, though not very numerous, were so enormous in size as to make up in some measure for the comparative failure of the crop.

Now, I have noticed that even in the most plentiful peach years, the Crawfords always found a ready sale in our local markets, at prices ranging from \$2.50 to \$4 per bushel; while, at the same time, the wretched seedling peaches offered for sale by farmers were sometimes very hard to sell at any price. The trouble with peach growers in this neighborhood is, that many of them depend, in a large measure, on the "chance seedlings" that spring up so freely on their grounds, instead of procuring trees of well known and valuable kinds like the Crawford.

I make these observations solely for the purpose of drawing public attention to this important matter, in hopes that the mistakes of former years may be corrected. It is a shameful fact that many wagon-loads of large peaches grown on the other side of the Niagara River are annually sold in the St. Catharines market at high prices, while our own farmers and fruit growers stand around trying in vain to sell the wretched little seedlings that grow upon trees that cost them nothing, and which in many cases were never planted. Now, let us have a sweeping reform in this peach business. Cut down all the weak and worthless seedling trees; procure good stock, from reliable and responsible dealers, and in a few years we may expect a sufficient supply of good peaches to meet the wants of our own people, without sending large sums of money out of the country to enrich our more enterprising American neighbors.

RECOLLECTIONS OF A RECENT JOURNEY SOUTH.

BY WM. SAUNDERS, LONDON, ONT.

(Continued from page 64.)

Before leaving Philadelphia I was privileged to visit several very interesting horticultural establishments. At Mt. Airy Nurseries, (Miller & Hayes, proprietors,) there was a large collection of very choice things, especially of evergreens, embracing all the newer and rarer sorts. One feature which was very noticeable here was the great attention paid to individual specimens, giving them sufficient space as well as care, to insure their perfect development, and the retention of their natural beauty of form. There was also a fine collection of the new variegated forms of *Enonymus Japonicus*, and a large space devoted to the out-door culture of Roses, which must look charming when the bushes are in bloom. The proprietors have a number of extensive greenhouses, where plants are largely propagated, and immense quantities of flowers are grown during the winter to supply the city demand for cut flowers; in this department Roses and Carnations have a prominent place.

That veteran horticulturist, Thomas Meehan, was also called on, and many excellent things were seen in his spacious grounds, while his large and varied stock of native trees and shrubs, the culture of which he has made a specialty, is probably unequalled on the continent. Here also in the office of this enthusiastic worker I saw the first portions of that superb work, "The Wild Flowers and Ferns of the United States," which is being edited by Mr. Meehan, and published by Mr. Prang, of Boston. It is issued in parts, each part being illustrated by four beautiful chromo lithographs, representing the plants in their natural colors and in the most artistic manner; the text also is most admirable and instructive reading.

The next stage in the journey was to Washington, where a visit was paid to the Department of Agriculture. Under the care of the very skillful superintendant, Mr. Wm. Saunders, the grounds here have much improved during the past five years. The shrubs and trees, which are arranged in family groups, have attained a fair size, and while they produce good effects as to appearance, they are also invaluable as a means of instruction to visitors. The flower beds about the building were blooming with Chrysanthemums of many colors, and so relieved by a tasteful arrangement of choice evergreens as to appear quite attractive, notwithstanding that the season for bedding plants was nearly over. Many beautiful varieties of *Arbor Vitæ* and *Retinospora* serve an excellent purpose here.

Accompanied by the obliging superintendant, a very pleasant hour was spent in the extensive conservatories among the tropical plants. Here were magnificent Palms from 20 to 30 feet high, and other striking and beautiful objects, but the character of this collection being mainly *economic*, it has an aspect entirely different from that of any where ornament takes precedence of usefulness. Almost every plant, shrub, and tree were useful to man, employed either as food, medicine, in the construction of implements of some sort, or articles of clothing. The ordinary Coffee Tree was represented by fine specimens of luxuriant growth, while alongside were examples of the Liberian Coffee Plant, showing at a glance the striking difference in the character of the foliage, as well as difference of habit, sufficient probably to establish its claims as a variety distinct from the ordinary *Coffea Arabica*. The Tea Plant is

largely cultivated, and many thousands of specimens of healthy young plants are annually distributed throughout those portions of the southern States where its culture is likely to prove successful. The reports, especially from some sections in Georgia, are very encouraging; and the area under culture is so rapidly increasing that it is probable that within a very few years a sufficient quantity will be raised in Georgia to supply some considerable portion of the tea demand of the United States. The sight of the various plants and trees which yield farinaceous substances, as well as those producing tropical fruits, was very pleasing, but to me the most interesting feature was the large collection of those which yield medicinal substances. The charming Cinnamon, with its beautiful glossy laurel-like foliage; the large leaved Pimento, fragrant at every pore; the luxuriant Camphor Tree; the Croton Oil Tree, from whose seeds the Croton Oil of commerce is prepared; the climbing vines which yield the Black Pepper and Cubebs Berries of commerce; the Vanilla Plant; the trees which yield Cinchona and Quassia; the Cascarilla and Coca shrubs; the Matico Plant, with its beautifully reticulated leaves; these, with a host of others, which would occupy too much space to mention—all served to make the visit a most delightful one.

Passing through the Smithsonian grounds on the way to the Institute, one could not help being impressed with the beauty and majesty of many of the trees and larger shrubs, which time, supplemented by care, has developed into the most ample proportions.

Leaving Washington in the morning, journeying southward, the country is very flat and uninteresting to the eye; but associated as it is with so many stirring incidents during the late war, a peculiar interest is attached to it. We soon crossed the Rappahannock, and after a time passed through Fredericksburgh, where there was some very severe fighting; in one burial ground visible from the cars there are interred the bodies of ten thousand of the Union soldiers. There seems to be but little improvement in this section of the country; the proportion of land under crop is very small, the untilled acreage must be something wonderful; and it is a rare thing to see a new house anywhere along the road.

Richmond, the city of seven hills, was reached about noon. The view from the high bridge crossing the James River is very beautiful; the city itself is prettily situated, with the advantage of an immense amount of water power adjacent, and seems to be in a thriving condition. But our train hurries on, and passing rapidly through the southern part of Virginia to Danville, the State of North Carolina was entered and the town of Greensboro' reached about 8 p.m., where we lodged for the night.

Early next morning we took train for Atlanta. The portions of North Carolina and South Carolina through which we passed were rather flat, most of the land poor, the soil being of a reddish color, and covered with scrubby undergrowth or small trees. There is a very small proportion of the land under cultivation, and well cultivated farms are "few and far between." The rude log cabins of the negroes are everywhere seen, but there is not much evidence of industry or thrift. Approaching the borders of Georgia, cotton fields were frequently passed, with the negroes here and there engaged in gathering in the third and final picking. The unpicked fields presented a very novel appearance, every plant being decorated with many pure white masses of cotton, which, contrasting with the dark back-ground of the soil, looked as if a snow storm had swept over it, leaving the snow in countless patches. The cotton plant grows from one and a half to two feet or more in height; the seed is planted in rows, the young plants being thinned out with a hoe, and the weeds subsequently kept down mainly by hand cultivation. The picking is done by the negroes, who work by the job, 50 cents per hundred lbs. being the usual price paid for picking; men, women and children are all engaged more or less in this work in season. The fresh picked cotton, containing all the seed imbedded in it, is taken to the cotton gins, where it is cleansed from the seed; the operator taking one-fifteenth part of the cotton and seed for his pay. At these establishments the cotton is also pressed and packed in

bales ready for shipment. The seed, which contains a great deal of oil, is sent in large quantities to various cities in the Union, where the oil is pressed out. There is also a large amount exported to foreign countries for the same purpose; but the seed being produced much in excess of any demand, either domestic or foreign, the greater portion of the crop is used as a fertilizer. To prepare it for this purpose it is fermented in heaps, and when decomposed is mixed with phosphates. The soil enriched with this mixture is rendered much more fertile, and the succeeding crop heavier in proportion.

Next in importance to cotton is corn, which is very extensively grown, and forms the staple food of the poorer class of the inhabitants, both white and black. There are also some very large sheep farms in this neighborhood; the parties engaged in such enterprises usually own large tracts of land, and as the animals need no shelter during the winter, they only see their sheep as a whole once a year, when they are brought together to be sheared and branded.

Although not related in any way to horticulture, I cannot forbear a reference to the mineral productions of the northern portions of these States, which are very interesting. Gold and copper is found in many places along the line. Near Charlotte, a town of 10,000 inhabitants, near the centre of the southern margin of North Carolina, we saw a number of small pits, where the negroes had been washing the earth for gold, which had been brought to the surface by the recent rains. Both gold and copper mines are now being profitably worked here. Precious stones are also found in this district; Corundum, and its sub-varieties, Sapphire, Ruby, Hyacinth, and Topaz; Diamonds also are occasionally picked up. One of the most remarkable mineral products is Stracolumonite, or elastic sandstone, which admits of being considerably bent without breaking; it is in a laminated form, the layers easily separable; this substance has thus far been found no where else in the world.

At Central, a small refreshment station near the dividing line between South Carolina and Georgia, a row of curious looking trees adjacent to the station attracted our attention. On examination they proved to be specimens of the Winged Elm, *Ulmus alata*, the branches of which were all winged on each side with a very peculiar looking flat outgrowth of the bark and woody tissue, giving the leafless trees a very singular look.

At 10 o'clock that evening we reached Atlanta, Ga.

THE THORN, “WHOSE END IS TO BE BURNED.”

BY A FELLOW WORKER.

BOY.— Dear mother, you said t’other day, it was plain
That God, Who made all things, made nothing in vain;
Now, if it be so, will you say if you please,
Did God make those thorns on our blackberry trees?
Picking fruit once with Pat, he swore at the thorn,
And wished the inventor had never been born:
He said naughty words, that I don’t like to tell,
And said, he believed that all thorns came from hell.

MOTHER.— Your questions, dear Charles, are indeed very queer,
To answer them plainly, not easy I fear:
Our Bible informs us, thorns came through our sin;
No thorns were in Eden ere sin entered in.
And the land bearing thorns rejected shall be,
And thorns shall be burned in the end, you will see.

BOY.— If so, I’m resolved what I’ll do in the spring,
From the woods, and the swamps, to our garden I’ll bring
Thornless bushes, and plants of various sorts,
And there I will watch all their freaks and their sports.
The plants bearing thorns by the thornless shall grow;
The seed from the thornless I’ll gather and sow;
Then the strong thornless plant that good fruit shall bear,
Shall be nurtured, and cultured, and tended with care;
But the plants bearing thorns rejected shall be,
And then, picking berries, what fun we will see.

ESOPUS SPITZENBURGH AND NORTHERN SPY.

BY REV. R. BURNET, LONDON.

The Esopus Spitzenburgh is the king of apples—the apple of apples. In flavor it holds much the same relation to apples as the Seckel does among pears. We are strongly inclined to think that it has the highest and most distinctive apple flavor there is. With all its distinctness there is nothing harsh about it; it is a truly delicious apple. Its origin is not obscure. It arose on the Hudson, at Esopus, a noted apple district inhabited by low Dutch, and has gradually secured for itself a very wide diffusion, being universally esteemed. Downing declares that all good judges of fruit consider it equal to the Newtown Pippin. Any apple comparable to the Newtown Pippin is worthy of consideration, for it is a superb apple. The Esopus Spitzenburgh, however, has merits all its own. In some districts it thrives splendidly, in some others it does not do so well. I have seen it spot badly in places, elsewhere it has been all that could be desired.

Grimsby seems a welcome soil for its production; in Walsingham it attains a large size; at Normandale it cannot be beat. After all said and done, however, the tree is a rather puny grower, and when old the shoots are slender, and the limbs pendulous. At Virgil it thrives exceedingly well, and yields fairly; as a rule, however, throughout the country it is not prolific; and while the best dessert fruit there is, it cannot be said to be for the millions.

The size is large, deep red, with gray spots, and delicately coated with bloom; flesh yellow, crisp, indicating the *fraiche* of the French, rich and excellent, and a delicious brisk flavor. It should have a place in every amateur and farmer's orchard. Its quality exceeds its quantity. Ready to eat in December; it will keep readily till May. We question if there be a finer cooker than the Esopus. Its quality as a dessert fruit stands A 1, and as a winter cooking apple it cannot be excelled.

Ellwanger & Barry state, in reference to the Northern Spy, that it is “one of the finest late keeping apples.” This is no mean praise, and well deserved. Few apples have so rapidly gained in public favor as the Northern Spy has done. It has peculiarities all its own. The fruit is large to very large, is beautifully striped, and quite covered on the sunny side with deep crimson, and delicately covered with bloom.

The flesh is juicy, rich, and highly aromatic, retaining its freshness of flavor and appearance till July. We have just opened a barrel of these delicious apples, grown and presented by Mr. Ed. Lutz, of Stoney Creek, (30th January,) they are in fine order, and but for their enormous size would be considered delicious dessert. It is styled “winter dessert.” Out of curiosity I had some of them baked. They cook splendidly, and thus preserve the good characteristics of their pomological associates. At Wellington Square Mr. Springer has a magnificent orchard of this variety, and finds they do well.

One strong recommendation to the planting of the Northern Spy is, that leaf and blossom buds open a week later than other varieties. This peculiarity almost always secures a good crop of fruit, inasmuch as the cold and trying weather that checks and destroys other varieties has passed before the “Spy” puts in appearance. Generous cultivation must be accorded to this sort, and as the tree is a rapid and upright grower, the branches need occasional thinning. As a market variety this can scarcely be excelled. It carries well, and gives the utmost satisfaction, both to grower and purchaser. A single orchard of this variety will amply repay the care and outlay of the cultivator. We ought to add, that here and there we have seen it spot. Good cultivation and dry soil are congenial to its growth, and are the grand remedies. It is a splendid

variety, and would have a place in any collection of twenty varieties.

AN ENEMY AMONG THE GOOSEBERRIES.

BY H. M. SWITZER, PALERMO.

The gooseberry is a favorite fruit of mine, and which in my garden I have raised to perfection until the last two years. I am very anxious to apply a remedy if I knew of one, and I thought that you would likely know, and, through our little welcome and useful monthly, diffuse such information that I would be able, with others similarly situated, to overcome the cause which deprives us of ripe delicious gooseberries. Shortly after picking the berries for canning, I notice on those left to ripen, a tiny dark spot, as if punctured; changing rapidly round it the green surface into a dull white, which soon assumes a brownish color, and before the berry is ripe drops from the bushes. On examination, I found a small maggot, a germ I suppose of some little rascal who comes to disappoint me in realizing a rich repast on my expectant ripe gooseberries. Now, Mr. Editor, can you tell me what it is? how to banish it? is there any cure? Is the little rebel a thief of the night, or is he a tramp of day light, using the light of the sun to rob me of my fruit? If you can give me any information that may be the means of conquering the nuisance, I pledge you I will endeavor to master it. Nothing else touches the fruit, no mildew or any other thing but the gooseberry worm, and that chap with me has a pretty hard time.

NOTE BY THE EDITOR.—We have not been favored by a visit from this little depredator, and having never seen him nor his ravages, can only suggest that if he begins his nefarious work this summer, that our correspondent send a few of the berries to W. Saunders, London, President of the Entomological Society, for examination. In the meantime we shall be very happy to publish any information that any of our friends may have to give on this matter.

HORTICULTURAL GOSSIP. VII.

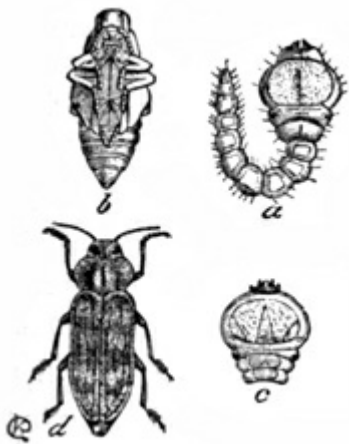
BY L. WOOLVERTON, M. A., GRIMSBY.

THE BORER.—On cutting down an old tree of about seventy years of age, I was astonished to find what ravages the Borer (*Chrysobothris femorata*) had been making in its trunk. No evidence of its presence had been seen outside. No cause could previously be given of the gradual decline of the tree, except that it was getting old; yet older trees standing near were still vigorous. But here was revealed the whole secret, for the trunk, from the bark to the heart, was ramified with tunnels made by the larva of the Buprestis Beetle. It was easily distinguished from the Two-striped Borer, (*Saperda Bivittata*,)—which also attacks the apple tree—by its flattened form, and enormous enlargement of the prothoracic ring, which gives it the appearance of having a huge head, while the larva of the latter is nearly cylindrical, short and fleshy. This genus of Buprestidae, which infest the apple and oak, (see Dr. Packard's guide to the study of insects,) is greenish black above, with a brassy polish; it is by no means so beautiful as many other genera of this family; indeed, its dark color and rough surface enable it to easily escape the notice of the observer. It lives but one year in its larval condition, while the two-striped Borer infests the tree in that state for the space of two or three years.

The discovery of these unsuspected ravages naturally arouses vigilance in the protection of other trees; and it points to much neglect during the several seasons past, in omitting the mid-summer application of soft soap and water to the trunks; having been deluded into the belief that this enemy was few in number, when in truth it was unusually abundant. We would therefore warn our fellow apple growers not to omit the annual washing of the trunks of all their apple trees, lest this insidious foe impair their vigor before his presence is even suspected. (For further valuable information concerning these beetles, we would refer the reader to the Report of the Fruit Growers' Association, 1870, pages 70, 71.)

THE WOODPECKER is one of our friends, but I am yet to be persuaded that he is faultless, although many of our best authorities declare he does no mischief whatever. I have to accuse him of overdoing his work

on our Early Harvest apple trees. It seems as if the sap of that variety at least must attract him, notwithstanding the assertion that he is not a sap sucker, but only an insect hunter. He has done no harm whatever to any other kind of apple tree, but many a large branch of this variety has been so completely girdled by their peck-holes, that it has turned black and died. But we do not wish to accuse him too harshly, for it is better to lose a good many branches through his friendly labors than whole trees by the devastation of borers, of which he is a greedy devourer. He pecks holes in the trees by means of his long wedge-shaped bill, and into these he thrusts his long tongue in search of insects; these he captures by means of a glutinous secretion, with which the tongue is new coated each time it is drawn in; or in case of large insects, by means of the barbed reverse filaments upon its horny tip.



The family (*Picidae*) includes hundreds of species, of which perhaps the more common among us are the Downy Woodpecker, (*Picus pubescens*) which is about six inches long, and twelve from tip to tip of its wings; and the Hairy Woodpecker, (*Picus villosus*), which is much larger. The latter is black above, with a white band down the middle of its back, and two white stripes on each side of its head, in addition to which the male has a scarlet crest. Both these are commonly called sap-suckers, which is considered an unmerited title.

THE MOUSE.—In “Notes on the Mouse,” I stated that I believed the species *Arvicola riparius* to be the most common kind found in the orchards of the Canadian fruit grower. Perhaps this may not be the case everywhere in Ontario, but in our own section, (Lincoln County,) it is certainly one of the most numerous species. To make sure about the matter, I sent some specimens for identification to Prof. R. Ramsay Wright, of the University College, Toronto, whose kindness in this respect I have before acknowledged. They were captured in the orchard, under some corn stalks, where they had made their nests and gathered a store for their young; but whence they were ready to make predatory excursions among the trees. The tail is very short, giving rise to their common name, “the Short-tailed Meadow Mouse.” Prof. Wright says: The (first) specimens belong to the species *Arvicola riparius*; order, meadow mouse. These seem to agree well with the long haired variety (*longipilis*) described by Baird, which is perhaps only the winter dress. The tail is a trifle shorter in proportion to the length of the body than Baird describes. He mentions that species of the genus have proved destructive in America to young trees, but does not specify any one in particular. Prof. Wright also refers to Dr. Cone’s monograph of the Rodentia for more detailed information; and adds that he will gladly render any further service in the identification of Canadian specimens of natural history.

EFFECTS OF FROST ON PLANTS AND SOILS.

BY P. E. BUCKE, OTTAWA.

The past summer season has not been the brightest on record for the fruit cultivator of this section. The winter of 1877-8 was marked by an unusually small snow-fall, and the consequence was that our cultivated raspberries suffered very severely, and especially Brinkle's Orange, which proved almost a total failure. I may remark *en passant* that though this plant is one of the most delicate of the raspberry class, it stands the climate here about as well as the hybrid or moss roses when there is a good protection of snow on the ground. The Brinkle's Orange berry is considered to be one of the most delicate flavored of fruits, and is highly remunerative when it does well, the berries selling readily for twenty cents per quart; it requires, however, a convenient market, as it is too soft to carry far. The reds also suffered more or less, and even the Philadelphia was a good deal frostbitten.

The action of the frost downwards as well as upwards is very peculiar, and it may not be uninteresting to mention a curious fact, which may account for some of the oddities of the vegetable nature. At the end of last August, Mr. Greenfield, of this city, had a Transcendent Crab tree which was apparently in the last stages of existence; in order that he might ascertain the cause of its coming end, he set himself to work to remove the soil very carefully, so as to get at the root of the evil and the roots of his tree at the same time. He was much astonished to find that the severe frost, which almost every one has observed to heave fence-posts, &c., had heaved his tree, and had broken off the small roots or spongioles, so that the tree was unable to assimilate its food, and, like a starving man, died of inanition. This examination has to my mind let in a flood of light on those diseases called "blight," and I feel certain a number of trees might be annually saved from a premature death by the application of a heavy mulch. It also shews conclusively how it is that all trees pass through the severest winters when there is a large amount of snow fall, especially if that snow remains on the ground well into spring. A heavy coating of the "beautiful snow" when it comes early, not only keeps the frost from entering the ground, but should the soil be frozen before it arrives, it keeps more from taking effect; and the warmth of mother earth or the capillary attraction which draws the water from below towards the surface, which is constantly going on, keeps continually reducing the crust from the underneath side, and when spring appears little or no frost is to be found. I have seen a fall of two inches of snow protect ground from six degrees below zero of frost; so that a pliant cane walking-stick could be readily thrust into the earth. There is at the time of writing four feet of snow on the level about here, and there has been good snow roads since the middle of November, consequently if we have anything like an ordinary spring, we anticipate a first class yield of fruits, especially of the strawberry, next season.

The Canadian Horticulturist.

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JUNE, 1879.

[NO. 6.

PRUNING THE GRAPE VINE.

BY A. HOOD, BARRIE, ONT., (LATE OF FERGUS.)

So much has been written about pruning, that it is almost presumptuous in one who cannot boast of much experience, to imagine himself able to say anything worth reading on this already threadbare subject; but it is precisely because so much has been said and so much has been done in this direction that it becomes necessary that some check should be put on this pruning mania, or there is danger of its being overdone.

An article which appeared in the August number of the *CANADIAN HORTICULTURIST*, for 1878, on the subject of summer pruning, met with my most unqualified approval. In it the writer contends that the nutriment of the grape is prepared in the leaves, and if a large part of these be removed, the fruit, be the summer what it may, will never ripen. This appears reasonable, because it is one of the functions of leaves to expose the sap to the action of the sun and air; exactly in the same manner as our lungs expose the venous blood to the action of the atmosphere, by which it is changed into arterial blood, and becomes fitted to afford nourishment to all the tissues of the body. The leaves therefore are the lungs of the plant; and it follows as a matter of course that if half of them are removed, the chemical change that should take place in the sap, through the action of the sun upon them, is only imperfectly accomplished, and the ripening of the fruit must be retarded, or the health of the vine affected, in the same way as is the health of a patient who has lost the use of one of his lungs by tubercular consumption; the analogy however between the two cases is not quite perfect, because the vine can produce more leaves, whereas lungs lost by disease cannot be restored; but the production of fresh leaves to take the place of those pruned away, exhausts the vitality of the vine, and this, combined with a deficiency of healthy sap, makes it more easily assailable by diseases such as mildew, rot, &c., and may have the effect of rendering it less able to endure the severity of the winter.

It would be easy to ascertain by actual experiment whether exposing the fruit to the direct rays of the sun has the effect of accelerating the ripening process; but in the absence of such evidence, it will suffice to say, that without leaves fruit will neither grow nor ripen; and in some cases it would appear that it ripens more rapidly in the shade, for it has been observed that grapes grown nearest the ground, and therefore most in the shade, are not only the largest and finest flavored, but ripen several days earlier than those grown near the tops of trellises. What says the editor of the *Pacific Rural Press*? "The largest, sweetest, and best flavored fruit to our taste, is to be found on vines trained about two feet from the ground and *well screened from the direct rays of the sun*." I have been advised to take the leaves off tomato plants with a view

of hastening the ripening process, and have seen that course followed by others, but never could perceive any beneficial results; in fact, it rather appeared as though the plants devoted their whole energies to renewing or replacing the leaves that had been so ruthlessly cut away; and the ripening, while this was going on, was rather retarded than otherwise.

The annual pruning of vines so generally practised, whether done in the fall, the winter, or the spring; whether on the renewal system or any other system, is not less injurious to the general health and productiveness of the vines than that above referred to as summer pruning.

There is throughout the vegetable kingdom, when nature is allowed to take its own course, a certain balance preserved between the roots on the one hand, and the leaves and branches of all trees and plants on the other; and to secure the best results, it is necessary that this balance should be maintained. It is just as important for the health of the roots, that a certain surface of leaves and branches should be exposed to the sun and air, as it is that there should be a sufficiency of roots to keep those leaves and branches in a healthy condition; and nature when left to herself always preserves this uniformity. The annual pruning of grape vines destroys this balance, by continually cutting down the branches, while the roots are allowed to grow unchecked; and the sap that should be chemically changed by the action of the sun on the surface of the leaves, is not so acted upon as to allow of its being returned to the roots in sufficient quantities to keep them in a vigorous condition. May it not therefore act on the general health of the vine in the same way that imperfectly oxygenized blood does on the human system?

When vines are planted so close together that the branches have not sufficient room to extend themselves, and are therefore pruned to keep them within bounds, the consequence is that innumerable shoots are thrown out from every joint of those branches that have escaped; and these if left to themselves will be covered with an abundance of leaves and a mass of foliage that the cultivator thinks too great for a large crop of fruit; therefore summer pruning is thought necessary, and the knife is again called into requisition, to the injury, as the writer believes, of both the vine and the fruit. Eight feet apart each way is the usual distance recommended for planting vines; whether or not such recommendation proceeds from parties having vines to dispose of, I shall not stop to enquire, but will merely state that in a paper read before the Michigan Pomological Society, the writer stated that in 1863 he planted one hundred and twenty Concord vines, six feet apart in the rows. They had good care and attention, but bore little fruit. The spring of the seventh year from planting he removed every other vine, and extended the arms to six feet instead of three; the result was a fine crop of fruit. To further test the matter, every other vine was removed from a Catawba vineyard of one thousand vines, that had been planted eight feet apart in the rows, and the arms of the remaining vines extended to eight feet instead of four; this largely increased the quantity of grapes. He also stated that he had Concord vines covering from twenty-four to forty-eight feet of trellis, that carry every year more grapes by actual test than any adjoining vines planted twelve feet apart and covering the same number of feet of trellis. Vines allowed to run at pleasure require no summer pruning, because their growth is not so rampant; they can also be laid down for winter protection without difficulty, which with short arms is impracticable.

Every practical gardener knows that if the stalks and leaves of the Rhubarb or pie-plant be too closely pulled, the roots will cease to grow, and the stalks will dwindle away till not fit for use. Yea, even Canadian Thistles can be completely destroyed by cutting off the tops persistently. Can it therefore be expected that the grape vine can be subjected to such ruthless pruning as is generally recommended without injurious results? Plant your grape vines therefore, if you please, eight feet apart; but if you do so, be sure and follow the example above recorded, and dig out every other vine as soon as it is perceived that they want more room, and very little summer, or indeed, any other pruning will be required. Are we then to allow our vines

to grow just as they please, and permit every poor weakly shoot that starts to grow? By no means; train your vines to any shape you please, and cut away any shoots you don't want, but permit those arms that are retained to run as far as they will, and cover the trellis as thickly with foliage as they are able. It is not the cutting of this shoot, or that arm, that will injure a vine, it is confining it to eight feet of trellis when it is able to cover eighteen. It is the persistent and continual shortening in of the arms or spurs, so that it is never permitted to revel in its wonted luxuriance of foliage.

APPLES FOR THE AMATEUR.

BY R. BURNET, LONDON.

A paragraph or two on apples especially adapted to amateur culture may not be out of place in the *HORTICULTURIST*. The lists presented at the winter meeting of the Fruit Growers' Association, at Hamilton, on the most profitable market varieties, have created quite a stir among apple growers. A short list of the finer varieties of apples, more particularly suited for home use, will find an echo in the minds of a great many amateur Canadian cultivators. In such cultivation, the matter of hardiness in bearing carriage, need not be taken into account. Domestic use is the great desideratum, and the highest flavored sorts may therefore be recommended without detriment to the grower.

First, among many compeers, is the Pomme Royale, a popular dessert apple, sometimes known under the name of Dyer, which name was given to it in mistake by the Massachusetts Horticultural Society, the members of which supposed it to be a seedling of Mr. Dyer, of Rhode Island. It is undoubtedly of French origin, and is no unworthy product and representative of La Belle France. Its character is seen in the numerous "spicy" names which it has at various times received and borne. "Golden Spice," "Coe's Spice," "White Spice," "Smithfield Spice," are samples of some of its synonyms, which it has received at different times and in different localities. It is to all intents and purposes a "spicy" apple. Its habit of ripening for a lengthened period is one of its peculiarities, recommending it for popular cultivation. We must not overlook the fact, however, that it sometimes "cracks" and "gapes" with very goodness, which cracks, while they mar the fruit for market, scarcely affect its value for domestic uses. The fruit is medium size, roundish, and regularly formed, smooth skin, pale yellow, with a faint blush, and a few dark specks on one side. The flesh is white, crisp, and juicy, with a very agreeable aromatic sub-acid flavor. It continues in season from early September till towards the end of October, and will amply repay the care and cultivation of the husbandman.

Another valuable apple for amateur cultivation is the Summer Rose. It ripens early in August; its excellence is testified to by the persevering visits of bees and wasps—no bad judges of good fruit. The ants too are fond of piercing its rich, waxy, yellow, streaked, ruddy sides, and greatly enjoy the early harvest it affords to their raiding habits. This apple is a delicious dessert fruit, scarcely of medium size, but it will prove a great acquisition to the amateur and general cultivator. We have known this apple yield a good return in the near home market, though the delicacy of its skin will always be a drawback to its marketable qualities.

Downing's description may be brief, but it is emphatic, "very good, or best," which we cordially endorse. Two trees of this variety would keep the dessert table well replenished till the later varieties are ready for presentation.

Though the Early Harvest be confessedly a good market variety, yet we would not fail to recommend it for amateur cultivation. Downing characterizes it by three admirable qualities, viz: for dessert, cooking, and productiveness. It may be said to be the best known of our early varieties, and deservedly so. The first of July finds it ready for use, and as descriptive of its earliness, it has been known in some localities as "the Large White Juneating." In early seasons, we have often ate it in the end of June. The color, when fully ripe, is a bright straw color, "flesh very white, tender, juicy, and crisp, with a rich, sprightly, sub-acid flavor." This apple has also received Downing's highest imprimatur, "very good to best."

We have long cultivated the Early Joe. The first intimation of its excellence was

communicated to us by Mr. W. A. Smith, Paris Road, Brantford, who has cultivated this sort for many years, and who is no mean judge of good fruit. The Early Joe is of American origin, having originated in Ontario County, N. Y. State. Of slow growth, it requires high culture for fair fruit, under favorable circumstances it is most productive. The size of the fruit is under medium, oblate, slightly conic, smooth, yellowish, shaded and striped with red, and thickly sprinkled with greenish spots. Flesh tender, juicy, with a very agreeable vinous flavor. It ripens from the middle of August to the middle of September. When known, this variety is greatly sought after, and esteemed for its good quality.

Benoni is an apple in some respects equal if not superior to the Early Joe. They both ripen in August, and are both excellent fruits. The Benoni originated in Massachusetts, from which have come so many of our desirable fruits. Hardihood of tree and productiveness of fruit go to recommend this variety. It is valuable both for market and table. The amateur will find it a most desirable variety for cultivation. Young people with keen appetites are fond of making large inroads into the dessert dish. The flesh is distinctly yellow, juicy, tender, pleasant, and sub-acid.

The Red Astrachan and Early Strawberry may be ranked together. Both varieties will give general satisfaction. The former was introduced into England from Sweden, and the latter is an American apple, originating near New York city. The Red Astrachan has become thoroughly acclimatized in Canada, and is very generally distributed. It requires to be pulled from the tree a day or two before it is ripe and ripened in the house. Left on the tree till fully ripe, it is apt to become mealy. The Early Strawberry has a tendency to profusely cast its young fruit. It is a rich fruit, when fairly ripe, and commands good prices in the markets of the United States.

The foregoing varieties will afford much satisfaction to all cultivators. To the amateur they are a *sine qua non*. It might not be out of place for us to say that one or two trees each of these varieties might be profitably planted along with the more general sorts. We guarantee delight and happiness from their cultivation, and when known and appreciated will lead to very general cultivation.

EFFECTS OF THE SCION UPON THE STOCK.

BY A. GILCHRIST, GUELPH, ONT.

Much has been written about the influence of the scion upon the stock, and *vice versa*, but comparatively little has been added to our knowledge of the controlling cause, because the experiments and observations have been so variable and conflicting. I have been grafting the weeping varieties of *Abutilons* upon the strong upright growing sorts, the object in view was to obtain miniature weeping trees for the greenhouse, which are novel and pretty. *Abutilon Mesopotamicum Variegatum*, which is of a slender weeping habit, grafted about three feet high upon any upright growing variety, makes one of the most beautiful weeping trees. In the south, where it would stand the winter, it would be a decided acquisition. Southern nurserymen might work it up, and give their patrons something new and beautiful. From these experiments in grafting, some curious variations have been produced. A *Mesopotamicum Variegatum* was grafted upon a *Duc de Malakoff*. Scarcely had the union taken place, when I observed faint markings of a yellowish appearance upon the leaves of the stock below the graft, which soon became as beautiful and distinct as those of a Thompsoni. The experiment was repeated with the same happy results. In one case the leaves became margined with white, but it soon disappeared, the leaves returning to their original color, while the mottled leaves retained their variation. In my next experiment I reversed the operation. I grafted a Santana upon a Thompsoni, but the stock had no effect upon the scion. One half of the plant is variegated, the other half green. These two varieties have been growing together for two years with no perceptible change. *Duc de Malakoff*, having deeply cleft or parted leaves, I was anxious to propagate it with those beautiful markings, it being a fine contrast to A. Thompsoni; but after the cuttings were rooted and growing freely, they always went back to their normal condition, showing it had the power to repel the disease which had been communicated to its cells. No doubt many of the variegated leaved plants that florists cultivate owe their beauty to some species of disease. From these observations it appears that the downward movement of the sap from the scion assumed controlling power, and that the scion has great influence upon the stock; no doubt the stock has a similar influence upon the scion, but not so much as many believe.

THE REBECCA GRAPE.

BY B. GOTT, ARKONA.

This excellent grape has been before the public for some time. It is of American origin, and is quite a favorite in some localities, but it is not so popular or so well known in others. Most grapes have their favorite localities or latitudes where they do their level best, and exhibit their highest qualifications, but are not so illustrious if taken from their native habitat and removed to places of less congeniality. Still there are some remarkable exceptions to this rule among grapes. In looking over the lists of catalogued fruits by the American Pomological Society, we get a better idea of these peculiarities of fruits than from any other source. This national influential society has divided the whole region of the United States and British Provinces very properly into three grand divisions, viz: the northern division, from latitude 42° to 49° north; the central division, from latitude 35° to 42° north; and the southern division, from latitude 28° to 35° north. In all these three grand divisions some varieties of grapes are equally popular favorites, notwithstanding the great diversity of climate, and are double starred several times in each of them. The Concord and Hartford Prolific for instance are most remarkable examples of this wonderful power of adaptation to differences of climate, and are universally popular, even in so many varied regions. The Delaware too is a bright and rich example of this same peculiarity, and is bedizened with double stars, north and south, with the greatest freedom. This is doubtless a most remarkable and a most valuable quality when possessed by any fruit so perfectly as it is by these justly popular varieties of grapes. The Rebecca, though a very good grape, is not one of this highly favored class. I do not mean to say by this that it is not popular, far from it, but I wish to be understood that at present it is not a favorite over so wide a range of territory and in so many different zones as is the Delaware. It is strictly a northern grape; although on the catalogue above referred to, it is double starred for West Virginia; starred for Maryland and district of Columbia, and for Pennsylvania, in the central division; and in the northern division it is starred for Michigan, New York, Massachusetts, and Maine, and we think ought also to be starred for Ontario, in Canada.

J. J. Thomas' description of this grape is very beautiful, and we take pleasure in copying it *verbatim* as follows: "Bunches nearly cylindric, compact, heavy, often shouldered; berries medium, oval; color, light green in the shade, golden in the sun, with a light bloom, somewhat translucent; flesh juicy, sweet, delicious. Ripens eight or ten days before Isabella, and keeps a long time. Healthy, not disposed to mildew. When fully ripe, one of the finest flavored of all grapes. Moderate grower, foliage tender. Hudson, N. Y." P. Barry says in addition, "When well ripened it is not surpassed by any of the native grapes." This is high praise, and is abundantly corroborated by our own experience with it here. We do not exactly know, however, what Mr. Thomas means by saying in his lucid description, "foliage tender," as we have not by any means found it so, but just the reverse; nor do we fully agree with his statement of the time of ripening, viz: "eight or ten days before Isabella," as with us it matured much before that variety, and is ready for the market with Delaware. Last season, when our vineyards were so badly cut back by the May frosts, so that our vines bore only a very light crop, and some not any at all, the vines of Rebecca were most profusely loaded, and the bunches were most remarkably firm and well formed. Some varieties too with us suffered much from mildew, but not a speck of mildew on Rebecca leaves or fruit. The charge that it is a slow grower is not well sustained, and applies only to it while young, and under the tender care of the nurseryman. For the first two or

three years of its life it is rather slow, and makes only small wood as compared with Concord or Hartford, but after it gets well established in the soil, and the soil is generous and suitable, it is a strong and rampant grower.

I am happy to endorse the following quotation taken from the pages of the *Country Gentleman*, Albany, N. Y., as being very timely just here: It says, "I notice that in many of the fruit catalogues issued by our most prominent nurserymen, the Rebecca grape is mentioned as a variety of merit, and worthy of a place in the garden of the amateur, but too tender for vineyard culture. This seems to me to do great injustice to this grape, which, combining beauty with excellence, takes the lead in New York market, commanding a higher price than any other variety grown out of doors. I was told a few weeks since by an up-town fancy fruit dealer, that he does not attempt to deal in this variety, because they are so expensive that few people could afford to purchase them. With me, out of over twenty varieties the Rebecca resists the attacks of mildew best of all, not excepting Concord, Salem, or any of the so called ironclads, which some years suffer to the injury of the crop, while the Rebecca growing by their side exhibits bright clean foliage and perfect fruit. It is also regular in its bearing, yielding a fair crop every year, and when properly grown often throws out arms fifteen or twenty feet in length. Then too the symmetrical and uniform size of the clusters renders it one of the most pleasant grapes to handle in packing for market, besides possessing the quality of withstanding injury by rough handling on the road better than any other grape of its class. I believe there are several new varieties soon to be offered to the public, and it is claimed that some of them bear a strong resemblance to the Rebecca, which is certainly a recommendation for the young strangers worthy of notice, and should ensure them at least a space in the experimental row of every vineyard."

THE VARIEGATED TEA ROSE, AMERICAN BANNER.

In the January number of the *American Agriculturist*, is an article from the pen of Peter Henderson, giving an account of this striking novelty in the way of a striped Tea Rose. He states that it originated in 1877, with George Cartwright, Esq., of Dedham, Massachusetts, as a “sport” upon the old Tea Rose, Bon Silene, and that the most marvellous feature in this sport is the fact that not only is the flower different, but the leaves also are quite unlike the leaves of the parent plant. It is nothing uncommon to find flowers of very dissimilar colors upon the same plant; instances of this are quite frequent in Dahlias, Verbenas, Petunias, and Carnations, but such a marked change in the foliage is something quite unprecedented. This rose is distinctly striped crimson and white, and has this advantage over all former striped roses, that it is of the ever-blooming class. Peter Henderson secured this beautiful novelty, and having propagated it sufficiently, now offers it for sale. We understand that so far, at least, the rose has retained its beautiful striped variegation, and gives promise of being a very valuable and unique addition to our list of ever-blooming roses. It is an exceedingly free bloomer, and retains the delightful fragrance of the parent rose.

A NEW INDUSTRY—FIG CULTURE AT THE NORTH A SUCCESS.

BY G. F. NEEDHAM, WASHINGTON, D. C.

Some writer has said: "In a climate like ours any addition to the luxury of fruits should be studied. We cannot have many of the productions of the more southern climes, but by a little care we can have some that are seldom grown."

The vegetable world has been "studied," and the result is that most of our vegetables have been gathered from these tropical homes. I propose in this paper to study one of the tropical fruits, the fig, from both a theoretical and practical standpoint. And I make this emphatic statement that no other crop can be raised which will give so certain and so large returns in our Middle and Northern States, as that delicious fruit, the fig.

The fig flourishes in much more unfavorable climates than our own. In Great Britain, for instance, figs have been grown in the open air for more than three hundred years; the original trees brought from Italy by Cardinal Pole, still bearing. Now, if in that damp, foggy, "misty, moisty" atmosphere, where melons and cucumbers cannot be grown, the fig will succeed, how much more will it flourish in our bright and sunny climate!

The climate of our north temperate zone is one of the best possible for the full development of the fig. It is a well known fact that too great heat is inimical to this plant; it causes the tree to cast its fruit. Our northern climes are superior to the southern for another reason—our days are several hours longer than at the south, which gives a lengthened and tempered day, which precisely suits the fig.

Countries where figs are grown as an article of commerce are exposed to similar vicissitudes of climate as are our Northern States. I have before me a letter from a gentleman in Massachusetts, in which he says: "I was born in the Levant, and I was a resident in Constantinople one winter, when the Golden Horn (the Bosphorus) was frozen over, and there was a snow fall of eighteen to twenty inches for a couple of weeks, without injury to the fig trees in the vicinity."

The reason that the fig yields so abundantly, is not only that it is prolific, but first, because the fruit has no insect enemies, and secondly, the wood has no blight or disease. *Every other species of fruit tree gives the grower a world of trouble on account of these.* Of these facts all are too well aware.

Common sense is quite as necessary in fig growing as elsewhere. A correspondent informs me that he has a "fig tree with thirty five sprouts." What kind of an apple tree would that be? He would have to wait a long time for any apples, and then they would be "smaller by degrees and beautifully less." Cut off all the sprouts but one, and plant them, and "in the sweet by-and-by" you will have thirty five trees.

The writer of a paper on the cultivation of the fig, (Department of Agriculture Special Report No. 4,) speaking of fig raising in the Southern and Middle States, says, "There are few fruit trees with so little trouble in their cultivation, that bear so abundantly or yield so much for so little care as the fig." Again, "The fruit is so great a luxury and so useful in so many ways, there is no reason why it should not become a very considerable article of commerce, and thus add to the wealth of the country."

If fig growing is so desirable for the Southern and Middle States, the testimony of Gen. Worthington is direct to the point, and makes sure the fact that fig growing is a success in our

Northern States also. After years of cultivating the fig in Ohio, he says: "It is quick grown, suits our climate admirably, is easily protected, is a sure bearer, and very prolific. The trees begin to bear when two years old, and when four or five they produce from the same area, with less labor, a greater and more certain crop than either potatoes or tomatoes. I like them best fresh from the tree, and often breakfast on them. The demand by the family is very great. The fig tree is eminently *the* fruit for the cottager and villager, and when its merits and adaptability to our climate become known, it will be as regularly grown for family use all over the Ohio valley as either the potato or tomato." And what is true of that State is true of the whole north.

In the Scriptures the vine and fig are very often mentioned in connection! (By the way, the fig will flourish where the vine grows.) And I ask that all my readers will join with me in a very loud *LAUS DEO* at the near approach of the promised good time. (Micah 4: 1 to 4.) When in all our broad land, north and south, "they shall sit every man under his own vine and fig tree, and none shall make afraid;" because all enjoy their God-given rights.

Believing as I do that the general cultivation of this fruit will be so great a benefaction, and add so much to the comfort of the people, I am prompted to write this paper, that if possible I may induce some without delay to make a beginning in cultivating this unequalled fruit.

I will send my paper of "Fig Culture," which tells how to grow the trees and how to cure the fruit, &c., to any address.

KIEFFER'S HYBRID PEAR.

There is probably no cultivator of pears who has not experienced, in greater or less degree, feelings of disappointment and discouragement arising from the destructive effects of that mysterious disease known as the *pear blight*. Many an enthusiastic pear culturist has had his enthusiasm changed into disgust by this "black-death" in the pear orchard. The honored President of our association could indite a jeremiad most lachrymose, if he would, by a simple recital of his own woes in this respect. The writer once called upon a gentleman who resided near Lockport, N. Y., and told him that he had come to see his beautiful pear orchard, of which he had heard so much said in its praise, and to see the specimens of fruit on trees of so great a number of varieties. He replied, "my pear orchard is gone; if you have read Byron's Sennacherib you will have the best description I can give you of my pear orchard; a month ago it was indeed a beautiful sight, now it is a blackened ruin;

"The angel of death spread his wing on the blast,
And breathed in the face of the foe as he passed."

Remedies almost numberless have been prescribed for this plague, but they all fail; theories as many have been invented to account for its presence, but none of them satisfy all the conditions of the problem; the only way of escape seems to be in the discovery or creation of a race of pear trees not subject to the blight.

For many years the Chinese Sand Pear has been grown in this country mainly as a curiosity, its fruit being esteemed as of no value, though Downing says it is good for cooking. This variety is remarkable for its very vigorous habit of growth, its large glossy foliage, and its entire immunity from blight. But no one of our hybridists seems to have taken it in hand with a view to raising a new race of blight-proof pear trees, and so Dame Nature, tired of waiting on man's dullness, has tried her hand at hybridising, and given us the first step in the way of this new departure.

In the *Gardener's Monthly* for June, 1878, is a communication from S. B. Parsons, of Flushing, N. Y., giving an account of a pear tree he saw in Thomasville, Georgia, known there as the Chinese Sand Pear, but which he could not recognize as the variety with which he had been familiar for thirty years by that name, because this Georgia variety was reported to him to be nearly equal to the Bartlett, and to ripen in July. He was told that M. Le Comte, the well known entomologist, had found it growing on the coast. Mr. Parsons says of it, "as an ornamental tree it possesses great beauty. Its habit is more pyramidal than that of the Buffam Pear, and greatly resembles that of the Lombardy Poplar. Its foliage is large, thick, with a light color and glossy stem, which is remarkably attractive. Its vegetation is also very early. Other pears near it had just commenced showing life, while the Le Comte Pear was in full leaf. Its fruit came in small quantities to New York market last July, and brought twelve dollars per bushel."

At the Centennial Exhibition in Philadelphia some pears were exhibited which were taken from an accidental seedling, growing upon an old place where trees of the Chinese Sand Pear had been planted for ornament. There happened to be trees of the Bartlett growing near to the Sand Pear, and it is supposed that the pollen from the Bartlett had effected a cross with it, and that these pears were the result. Wm. Parry, of Cinnaminson, N. J., was so well pleased with it that he secured the tree upon which these pears grew, and is now distributing it under the name of Kieffer's Hybrid. The original tree is said to have commenced fruiting in 1873, and has yielded good crops every year since. It is not only productive, but it maintains the same healthy habit as the Sand Pear, manifesting no symptoms of blight or of any disease whatever.

The fruit is of good size, weighing from ten to twelve ounces, very uniform, greenish yellow with some russet; flesh white, juicy, and of good quality. It never rots at the core, like Clapp's Favorite and Flemish Beauty; is ripe in October, and on these accounts promises to become valuable as a market pear.

Another seedling from the Chinese Sand Pear, supposed to be a hybrid, has been raised by Mr. Garber, of Pennsylvania, and is said to be an excellent dessert pear, ripening in August, of large size. It is known as Garber's Hybrid. Another known as the Sandwich Island Pear, is mentioned by Mr. Teas, in Case's Botanical Index. It was grown in Ohio from seed saved by a lady, some twenty years ago, from a fruit she bought in San Francisco, called there Sandwich Island Apple. The tree closely resembles the Sand Pear in foliage and habit of growth, while the fruit is shaped like a Rambo Apple, but larger; of a beautiful yellow color and unsurpassed for canning and preserving. Ripe in September.

Mr. Teas also mentions another pear which has been called the Cincincis Pear, introduced by Mr. Smith, of Ohio, but believed to have been originally imported from the South of France. He believes this to be a pure Japanese Pear or seedling from it. This tree, he says, has fruited for over fifteen years. The fruit ripens in September, will keep for over a month, and is excellent for canning or preserving.

All of these trees are very vigorous and healthy, free from blight or disease of any kind, and Mr. Teas remarks that they are the foundation for hopes of great things, in producing new and hardier varieties of pears, and it does seem that in these we have the beginning of a new race of blight-proof pears. Whether they will take kindly to a northern climate, and bear without harm the rigors of Canadian winters, can only be ascertained upon trial. We wish that the Fruit Growers' Association had the means to import a couple of thousand trees of this promising strain, and distribute one to each of its members for trial in our climate. Should some or any of these crosses with the Sand Pear prove to be able to endure the severity of our winters, and maintain, under the strain of our below zero freezing, their immunity from frozen-sap-blight, and all other sorts of blight; we have indeed in these hybrids the beginning of a valuable race which shall not only be exempt from that terrible scourge of our choicest pears, the blight, but which under skilful treatment will yield varieties as numerous and as delicious as any of the famed Belgian sorts; and what a field for our hybridists; a field where our Arnold, and Saunders, and Dempsey, and Mills may build them an enduring monument, and say with Horace,

"Exegi monumentum ære perennius,
Regalique situ pyramidum altius."

ANSWER TO THE THORN QUESTION IN THE MAY NUMBER.

BY P. E. BUCKE, OTTAWA.

Were all the world a bed of flowers,
Our wishes filled on sea and land,
And all the thorns on shrubs and briers
Were smoothed by nature's wealthy hand;

Had we no toil our limbs to tire,
No hills to smooth, no vales to raise,
What motives would our souls inspire;
How should we reap our Maker's praise;

"Well done thou good and faithful one,
On earth thou tried'st thy best to do,
Thy course through life is safely run,
Enter a state of rest into."

What are our trials, troubles, here,
Our disappointments and our sin,
But thorns that shoot up everywhere
To vex and pinch our lives within.

What makes the northern nations strong?
What most improves the human race?
But energy to overcome
The thorns that spring in every place.

In history we often read
That good hath out of evil sprung.
How John did sign at Runnymede
The charter from his evils wrung.

How our salvation was procured
By persecution's fiercest hate;
Which else this beauteous world had seared,
Had good not come through evil's gate.

Then let us bless both thorn and flower,
Which He doth plant in dale and dell,
Content to know that by His power,
On earth "He doeth all things well."

The Canadian Horticulturist.

VOL. II.]

JULY, 1879.

[NO. 7.

CHINESE PEONIAS.

Flowers have their ins and outs as well as politicians. To-day the Camellia is all the rage—every one votes for the Camellia—no lady thinks of attending an evening party without a Camellia in her hair, or so numerous in her bouquet as to be a conspicuous feature; in short the Camellia holds the reins of power. But a change comes over the public mind. Gradually this beautiful flower loses its grasp of the popular favor, and now it is out, and the Rose is in! No lady may now appear without a rose in her hair; no gentleman without a rosebud in his button-hole.

So it is also with the flowers on our lawn; we are continually running from one extreme to another, lavishing all our attention upon one favorite flower or two, to the neglect of others equally valuable, and perhaps on the whole more beautiful. Just now the Peonia has fallen into the cold shades of neglect. Why, no one can tell, for it possesses many claims upon the attention of lovers of beautiful flowers, and especially in this trying climate of Canada. We call the attention of the readers of the CANADIAN HORTICULTURIST to the Peonia, in order that a neglected but beautiful flower may find among us the position which its many excellencies fairly entitle it to hold among the adornments of our lawns. As has been already intimated, the Peonia possesses the very important quality of being perfectly hardy, able to endure the cold of our severest winters without protection, and to stand the heat of our fiercest summers. This is no unimportant quality. There is no need of anxiety in the choice of location, lest the cold of winter injure it, or of seeking shelter beneath some favoring shade from the mid-summer sun. No gathering of material on the approach of winter to spread over the Peonias, to be carefully carted away when spring returns, is needed. The foliage as it dies down when the season of rest approaches nicely covers the crown, and affords the buds that lie concealed in the soil beneath all the protection required.

Another very important quality possessed by the Peonia is its entire immunity from the attacks of insects. For five and twenty years at least have a number of varieties of this flower been growing on the grounds of the writer, and yet in all that time have they never been marred by insects of any kind. How different is the case with our roses. Those beautiful flowers can be had in their perfection only by constant care and vigilance. Armed with hellebore and garden syringe we must needs wage annual war with the Rose Slug and the Rose Thrip, or these insidious pests will ruin our roses. But we have no need of this watchfulness and toil to secure a full display of Peonias. Year after year, without fear of slug, or thrip, or caterpillar, these have bloomed on without stint, and made the garden gay with their various tints.

Besides, the plants seem to be exempt from diseases of every kind. No mildew ever ruins foliage or flower; no blight, with sudden destruction blasts our expectations, but year after year the plants grow with unabated vigor, increasing in size and beauty.

Another feature is the great variety of colors presented in the flowers, from pure white through every gradation of pink, rose, rosy-lilac to dark purplish crimson. And the flowers are so large and brilliant, and withal so pleasantly rose-scented, that while their showy brightness attracts attention, their perfection of form and sweetness of fragrance admit of the closest inspection.

For the guidance of any who may wish to enrich their grounds with these attractive flowers, which may be purchased of all nurserymen at very moderate cost, we give a list of the names of a few sorts which we have found to be the most desirable, presenting a wide range of coloring and a succession of bloom that will continue for fully a month.

Amabilis Grandiflora. This is one of the early bloomers; the petals of the outer row which are larger than the others, are of a rich deep pink very beautifully shaded, and all the interior petals of a delicate straw color. The flower is very full and perfectly double, of large size and exceedingly attractive.

Delicatissima. This variety opens very shortly after the foregoing; is large, very double, and of a fine, delicate rose color throughout.

Papilionacea. A very showy white flower, large and full, the outside petals having the slightest tint of pink which is gradually lost.

Delachii. The color of this is a very dark purplish crimson, quite double; a very striking and handsome variety.

Pottsi. This is not as double as *Delachii*, but the coloring is more brilliant and lively, and the contrast presented by the numerous bright-yellow anthers with the deep crimson petals is very pleasing. This variety has the singular habit of yielding single flowers, or nearly so, in some seasons, while in others they are quite double.

Festiva Maxima. A very large, full, double, globular, white flower, having the centre petals streaked with a few marks of carmine, which greatly relieve and enrich its appearance. One of the most beautiful and showy of this beautiful race.

Humei. Color, purplish rose; flower large very full and double, one of the latest bloomers, continuing the season of Peonias for nearly a month.

Queen Caroline. The form of this flower is cupped, like a rose, which it very much resembles also in color and fragrance. It is of great size and exceedingly showy.

Whitlejii. A very large flower, white, with a slight lemon tinge to the centre petals, very full and double and fragrant.

With these varieties placed in clumps among the shrubbery, or, if preferred, massed in a bed, there will be no lack of beautiful flowers during the month of June. Their culture is of the most simple and easy kind. Once planted they should not be disturbed for many years, requiring only a top-dressing of well rotted manure in the spring to stimulate their growth and increase the size and beauty of the blooms.

THE APHIS, OR PLANT LOUSE.

This pest of the greenhouse and window-garden does not often attack our orchards in such numbers as to become a source of alarm. It seems from Mr. Woolverton's article on page 101 that they have appeared in some orchards about Grimsby in unprecedented numbers, and it will be interesting to learn how seriously they injured the trees or affected the crop, and with what measure of rapidity our friends the Ladybirds succeeded in diminishing their numbers.

In our window-gardens and greenhouses, however, we cannot rely upon the Ladybirds to rid us of the Aphis. They increase with such marvellous fecundity, and do their work of destruction so rapidly upon the tender indoor growth, that some measures must be taken to arrest them in their work of destruction more prompt and more sweeping than the voracity of the Ladybird. Hence in greenhouses recourse is had to fumigation. The ventilators are carefully closed, and every opening through which the smoke can rapidly escape is stopped, and the smoke made to remain among the plants until the Aphis succumb to the poison of the tobacco. This work of smoking them to death with the fumes of tobacco is comparatively easy in our greenhouses, but is very troublesome and inconvenient in the case of house plants. No tidy housekeeper wants to have her rooms filled with the odor of tobacco smoke every few days, until her house has the fragrance of a bar room. And the expedient of substituting sulphur for tobacco, which was tried by a lady correspondent of one of our horticultural exchanges, is one that will never be attempted a second time, for though it may kill the insects, it will also kill the plants.

Some remedy for the Aphis on our house plants, less objectionable than tobacco smoke, has been long sought for, and many expedients resorted to, but none of them have been quite satisfactory. Of late years it has been ascertained that the powdered flowers of the Dalmatian Pyrethrum are very energetic insecticides, and that either whole or powdered they retain this quality for a number of years. The attention of housekeepers has within a short time been drawn to this powder as a means of killing house flies, cockroaches and fleas, which sometimes become very troublesome, and small blowers or bellows have been made and sold for diffusing the powder and scattering it as dust in the air so as to kill these insects. Finding that our house flies were easily killed by this powder, experiments were made upon the Aphis, which were infesting some scented geraniums, and to our great pleasure they were shortly after found strewn the ground under the plant, like the wounded and slain on a field of battle.

Our entomological friend, W. Saunders, of London, has given in the *Entomologist* for March an account of his experiments with this insect powder. His trials were made in a greenhouse where they seem to have been very abundant, the air of which he freely charged with fine clouds of the dust of this insect powder, and found that the Aphis soon began to manifest symptoms of uneasiness and to drop to the ground, and after the lapse of a couple of hours the greater portion of them were lying upon the ground or the shelves or floor. Mr. Saunders is led to believe that they are not killed outright by the powder, but that they are so stupefied or paralyzed that they fall, and are unable again to return to the plants, and so eventually perish.

These experiments seem to indicate that we have in this Dalmatian Pyrethrum powder a very valuable means of ridding our house plants of the Aphis; one that can be easily applied, and at any time, without the inconvenience arising from tobacco smoke. In what way the powder acts upon them seems not yet to have been ascertained, some attributing the effect to a volatile oil contained in the flowers, others to an alkaloid. It is not at all necessary to throw the powder directly upon the insects, but merely to fill the air of the room with a cloud of the dust and close

it for a few hours, when the flies of your dining-room and the Aphis on the window plants will be found killed or paralyzed by its mysterious power.

Mr. Saunders states that the powder made from the flowers of *Pyrethrum roseum* and *carneum*, sold under the name of Persian Insect Powder, though a good insecticide, is not as energetic in its action as the powdered flowers of the *Pyrethrum cinerariæ folium*, known as the Dalmatian Insect Powder, the plant being a native of Dalmatia, Austria. The Dalmatian Powder commands a higher price than the Persian on account of its greater efficiency, yet notwithstanding the price, is to be chosen in preference to the other.

HORTICULTURAL GOSSIP. (VIII.)

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

Aphis mali (Fabr.) Our apple orchards are swarming with plant lice. A few days ago we were exulting over the unprecedented show of fruit blossoms, even upon apple trees that bore heavily last year; and we were just congratulating over the almost complete disappearance of the Canker Worm, which for three or four years has been our worst enemy; when lo! these tiny insects of a hated race (*Hemiptera*) were discovered on every leaf and fruit blossom in countless numbers as busy as they could be, sucking the juices from the tender growth, and multiplying with terrible rapidity.

By referring to the Report of the Fruit Growers' Association for 1869, p. 77, a very good account of this insect may be found, and to show how great is their fecundity, it is there stated that from a single female there may be produced in seven generations the enormous number of *seven hundred and twenty million* descendants! And as there are from nine to eleven generations in a single season, it is easily seen that this enemy, though despicable in size, may yet be most formidable by reason of its numbers. It is less than the tenth part of an inch in length, and is developed from a tiny egg concealed in a crevice of the bark. It is stated that all the young produced from these eggs are females, which at the age of fourteen days begin to bring forth their young alive; and no eggs are laid until late in the fall, when a generation of males and females are produced, which are the parents of the eggs then deposited, to be hatched the following spring.

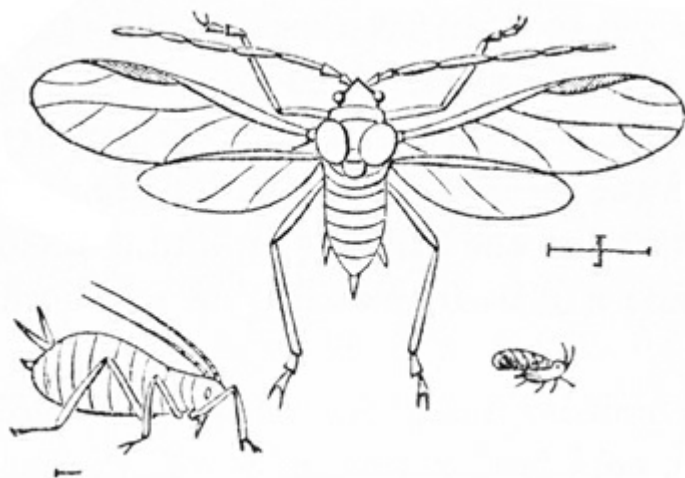


FIG. 8.

The accompanying cut, figure 8, shews the winged male and the wingless female greatly magnified.

"These facts do not afford much encouragement about the fruit prospects of the following year, do they?" No indeed, unless there is some remedy; for such countless myriads will soon suck out the life from the blossoms and inflict serious injury upon fine trees; and the artificial remedies, viz: (1) dusting with sulphur, (2) showering with soap suds, or (3) with a decoction of tobacco, are

too tedious to be applied to an orchard of thousands of trees.

Fortunately the affairs of nature are in better hands than are those of the nation; and the Governor thereof takes better care of the interests of the fruit grower than could the wisest man or body of men. On every tree infested by the lice, I find dozens of Ladybirds, of that very

common species the *Coccinella novem notata*, or Nine-dotted Ladybird. They are just now, (May 16th), hurrying about the trees, some of them engaged in devouring the small enemy, and some of them in depositing their bunches of yellow eggs, from which will soon issue larvæ more voracious than the parent.

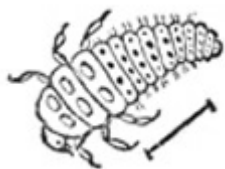


FIG. 9.

I feel anxious to see them get the victory, but the myriad hosts almost appal one's faith in their friendly succour. I have no doubt that they will ultimately be victors, but when each of their enemies produce four new foes daily, one cannot help fearing that much mischief will be done to the orchard before a clearance is effected.

Figure 9 is an illustration shewing the Ladybird, and figure 10 the larva of the Ladybird, in both of which forms of life it preys upon the Aphis.



FIG. 10.

Celandine Poppy. Among other troublesome weeds that should be destroyed from our lawns and gardens during the month of May before they seed, may be mentioned the Celandine Poppy (*Stylophorum diphyllum*). It belongs to the Poppy family (*Papaveracea*), and is easily distinguished by its peculiar yellow juice, which stains the hands in pulling it, and by its distinct columnar style, from which the name *Stylophorum*, or the style bearer, is gained. This last peculiarity is one means of distinguishing it from the Celandine itself, which has saffron colored juice, and similar small yellow flowers with four petals, but has almost no style at all.

A Botanical Society. I have seen something said about instituting a botanical society. The idea is an excellent one, and should have every encouragement from fruit growers, for there are no two departments of science to which we are so much indebted as to botany and entomology; and the advantages we would reap from the investigations of such a society would be equalled only by the invaluable assistance we have gained from the Entomological Society. What an addition to our Annual Report would it be to have a few papers on botany, either purely scientific, or still better, applied to practical horticulture, the productions of some members of this future botanical society. For instance, how interesting might a paper on the grasses (*Gramineae*) be made, treating of the more common kinds, of the soil best adapted to each, and their respective uses. Or an article might be written showing what characteristics the rose, pear, apple, plum, strawberry and blackberry have in common, that they should be grouped together under the same family, *Rosaceae*; or monographs might be written upon various single plants, trees or shrubs, containing things new and old, in reference to them, and embodying the results of careful observation.

No doubt you too, Mr. Editor, would gladly open the pages of the *HORTICULTURIST* to any members of such a botanical society, who would prepare popular articles upon their favorite subject.

Thus our Association, being fed on one side by a stream of entomological information, and on the other by a stream of botanical service, would surely live and flourish, "as long as grass grows and water runs."

THE FIRST OF THE SEASON.

BY REV. VINCENT CLEMENTI, B. A., PETERBOROUGH.

Those persons, if any such there be, who have been indulging the pleasing hope that the swarm of potato beetles, *Doriphora decemlineata*, is becoming “small by degrees and beautifully less,” will, I fear, find such hope a fallacy.

I had set out in my garden a dozen fine tomato plants, six of the Improved Trophy, and six of the Acme, and had carefully protected them from the sun by day and from the frost by night, when, on Saturday the seventeenth instant, I discovered the terrible pests above named feeding upon their leaves, and in so lively a condition that they were evidently preparing for the propagation of their unwholesome species.

I have intimated that I had to protect the plants from the frost at night as well as from the sun by day, for whatever the nocturnal temperature may have been in your more genial climate, with us, on the night of the eighth instant, my self-registering thermometer ran down to 30°, and again, on the thirteenth the spirit rose in the afternoon to 86° in the shade, a variation of 56° in five days.

Another and far more agreeable “harbinger of spring,” a so-called robin, which, however, is really a thrush, (*Turdus migratorius*), built her nest on the capital of one of my verandah pillars, within a few feet of the front door; and notwithstanding the disturbance occasioned by the passing to and fro of many people throughout the day, has succeeded in hatching out her progeny, and, aided by her mate, is now diligently supplying her callow brood with their favorite food, the luscious worm or the juicy caterpillar.

My lawns, thanks to a good top-dressing of old manure given them last fall, are looking beautiful, never more so, and have already been subjected three times to the operation of the mowing machine.

BARREN PLUM TREES.

An esteemed correspondent writes, "I have a number of plum trees old enough to bear fruit but which yield none. What plan would you recommend to promote or hasten fructification?"

It is well known to experienced fruit growers that the wood producing forces of a tree are in some degree antagonistic to the fruit producing, and hence when a tree is rapidly making wood it bears but little or no fruit. It may be that our correspondent's trees are in that condition, and that by reason of the richness of the soil, or the application of stimulating fertilizers, and that perhaps for a very different purpose, such as the growing of garden produce, the trees are kept in a condition of active growth, and hence its energies, so to speak, are exhausted in the production of wood and leaves instead of fruit. If this be the case, the remedy is to be sought in the use of some means whereby the tendency to produce wood may be checked. This can be done by withholding fertilizers, if any have been applied, either to the tree or to the soil within reach of the roots. If the soil be naturally so rich as to produce strong wood growth, or it be inconvenient to cease using the ground within reach of the roots for garden purposes, the growth of the tree may be checked by digging a trench around the tree at a sufficient distance from the trunk to prevent too severe a shock to its growth, and to a sufficient depth to cut off the feeding roots, and so diminish the supply of stimulating food. This check to the growth of a tree will often at once produce a change, and throw it into bearing. The like effect is sometimes produced by bending down the limbs, and fastening them in a horizontal position. This checks the rapid upward flow of the sap and induces the formation of fruit buds. Another method, but one that requires much care lest permanent injury result therefrom, is to bind some ligature tightly around some of the branches, and in this way hinder the flow of the sap sufficiently to arrest the rapid growth and induce fruiting. Such ligatures will need to be carefully watched, and not allowed to remain long enough to injure the limbs by cutting too deeply.

Some varieties of plum, apple, pear, &c., do not come to fruit bearing age as early as others, and though the trees may seem large enough to bear large crops, they have not yet reached that degree of maturity requisite to the production of fruit. The Northern Spy Apple tree is an instance of this slow maturity; the trees of this variety will attain a size three times as great as that of the Early Harvest near by, which has been yielding fruit for several years, before it will begin to bear. It may be that our correspondent has some variety of this slow habit, which takes many years to come to a fruit-bearing condition. If so, the root pruning, and other methods of inducing fruitfulness already mentioned, will have a tendency to hasten maturity.

But there is another cause of seeming barrenness in the case of plums trees, which must be traced to quite a different source. The tree is not to blame, it forms fruit buds, blossoms, sets fruit, but the fruit all drops off before it is half grown, and the owner naturally enough complains that his plum trees yield him no fruit. The plums drop off because they are stung by the Curculio. Such however is now the general diffusion of knowledge on this subject through the labors of our entomological assistants, to whom the fruit grower and the farmer owe many a debt of gratitude, that it is not probable that the Curculio is the cause of want of fruit on our correspondent's plum trees. The fallen plums, scarce half grown, strewing the ground beneath the trees, bearing the crescent mark of the little enemy, tell all too plainly the cause. The remedy in this case is already well known to our readers.

FIG CULTURE AT THE NORTH A SUCCESS.

We have been favored with a second paper from Mr. G. F. Needham, of Washington, D. C., with the above title. He is very confident that the fig can be successfully and profitably grown in our climate. He has recently received a letter from a gentleman in England, an American, who has resided in England and France some thirty years, and for seven years at Brighton on the south-east coast. In his letter he expresses his astonishment that the fig has not found hundreds, aye thousands, of cultivators, and a ready market for all produced. He says, "I have enjoyed special opportunities for witnessing fig culture in this part of England, where it is grown profusely, without any special care or outlay, though much exposed to the cold south-east winds, which are blighting in their character and effects at certain seasons of the year; yet the fig tree survives it all, gives a good growth in leaf and branch, yields abundantly, and the fruit finds a ready market, and gives a good profit to the grower. Some of the fig orchards in this vicinity were planted in 1745, from some old stocks which had been brought from Italy by Thomas à Becket."

Mr. Needham argues that if the fig will succeed in the damp, foggy atmosphere of England, where melons and cucumbers cannot be grown, how much more will it flourish in our bright and sunny climate; and adds, "the climate of our north temperate zone is one of the best possible for the full development of the fig. It is a well known fact that too great heat is inimical to this plant; it causes the tree to cast its fruit. Our northern climes are superior to the southern for another reason, our days are several hours longer than at the South, which gives a lengthened and temperate day, which precisely suits the fig. Countries where figs are grown as an article of commerce are exposed to similar vicissitudes of climate as are the northern States. A gentleman in Massachusetts writes, 'I was born in the Levant, and was a resident in Constantinople one winter, when the Golden Horn was frozen over, and there was a snow-fall of eighteen to twenty inches for a couple of weeks, without injury to the fig trees in the vicinity.'"

Mr. Needham further states that the fig has no insect enemies, and the wood has no blight or disease; and that what Gen. Worthington says of its culture in the Ohio Valley is true of the Northern States throughout. The General says, "It is quick grown, suits our climate admirably, is easily protected, is a sure bearer, and very prolific. The trees begin to bear when two years old, and when four or five they produce from the same area, with less labor, a greater and more certain crop than either potatoes or tomatoes. The fig tree is eminently *the* fruit for the cottager and villager, and when its merits and adaptability to our climate become known, it will be as regularly grown for family use all over the Ohio Valley as either the potato or the tomato."

Mr. Needham's paper goes on to give the following suggestions:

The *figus carica* of Linn., is indigenous in Asia and Northern Africa.

With us it is a deciduous shrub, which can be propagated by cuttings as easily as the currant. It fruits when very young, and different varieties bear white, black, brown, green, blue, etc., fruit which vary in size from a hickory nut to a Bartlett pear. The trees should be planted in a moderately rich soil. Too rich soil causes the tree to run to wood. By selecting suitable varieties the ripening season may be extended from July till frost.

PLANTING.

In the spring (at time of corn planting), throw up one or more ridges eight feet wide and sixteen inches high in the centre. On the top of this stake off distances ten feet apart. At these stakes dig trenches across the ridges, say two feet long and ten inches wide. Throw the top soil

in a pile, and throw the sub-soil away. Replace the soil in the form of a mound, one inch below the level in the centre and six inches below at the ends. Then separate the roots into two parts. Set the trees at the centre point, with the roots extending right and left down the mound. Fill up with any good soil and tread down thoroughly.

PROTECTING.

In the autumn, before danger from severe frosts, prepare the trees for winter quarters, by cutting the roots growing lengthwise of the ridges with a sharp spade, not disturbing the original roots that were planted. Lay down the trees (lengthwise of the ridge) pegging down the branches that may need to be, then cover with earth, in the latitude of Boston four inches deep. And no matter how old the trees, by this method of planting they are laid to rest very easily. Only with older trees, after the branches are pegged down, it will be best to fill in the interstices with leaves and then cover as before.

I think I hear an objection, "too much trouble." We do not hesitate to grow other luscious fruits on that account; and the necessity of winter protection will be atoned for from considerations before named. It cost about one cent each to protect the trees of my fig orchard this fall. A man and a boy laying down and covering over a hundred per day.

AFTER TREATMENT.

In the spring, at the time before noted, remove the earth from the trees and raise them to their positions. Thus it will be seen that the care of the trees is not great, and the whole operation is quite simple. The unripe figs that were buried with the wood will form the first crop of the next year.

HOW TO EAT FIGS.

In the East they seize the fruit in the left hand, with a knife cut off a thin slice from the large end and then peel the fruit. Fresh figs and cream make a dish "fit to set before"—an "American sovereign." Fig preserves are also most delicious.

DRYING THE FRUIT.

The method is: The fruit is put into baskets, which are dipped for two minutes in strong potash lye, and then into clear water. The lye eats off the tough and gummy coating, and improves the color of the fruit. The figs are then placed on hurdles and dried in the sun or by artificial heat, and when sufficiently soft to press closely they are packed in boxes.

ROOT PRUNING.

Should the soil be too rich it will be necessary to root-prune the trees at time of laying down. This is done by cutting off with a sharp spade a portion of the original roots. The necessity of this will occur when the tree is woody and long jointed.

English authorities say that the fig will thrive in almost any ordinary garden soil, but care must be taken not to make the soil rich, for invincible grossness will be the consequence. A plain maiden soil is quite rich enough for general purposes.

The numerous letters of inquiry on the subject of Fig Culture at the North received by Mr. Needham from Canadians have induced him to send these further hints for publication in the *CANADIAN HORTICULTURIST*.

RECOLLECTION OF A RECENT JOURNEY SOUTH.

BY WM. SAUNDERS, LONDON, ONT.

(Continued from page 74.)

Atlanta, "the Chicago of the South," is well situated, on a very elevated plateau, more than one thousand feet above the level of the sea, and is probably the healthiest city in the south, and enjoys a temperature comparatively cool in the hottest periods of the year. It is the centre of an extensive railway system, and has a busy aspect; its population is about forty thousand, one third of which is black. Since the burning of the city after its capture by Sherman, towards the close of the war, it has been almost entirely rebuilt, many of the buildings being of a very substantial character, and some of the private residences quite elegant.

An early morning walk revealed some novelties. One of the first things which attracted my attention was a tree new and strange to me, one which is extensively used here as a shade tree. It was leafless at this season, but being decked with large clusters of milk-white berries, was very attractive. This proved to be the Pride of India or Chinaberry Tree, *Melia Azedarach*. The berries are said to contain saccharine matter, and were used to make a fermented alcoholic beverage during the time of the war. One who has only seen the beautiful glossy foliaged *Euonymus Japonicus* in greenhouses or as a small half hardy shrub in the open border during summer, can form no idea of the beauty of this bush here where it is perfectly hardy and thrives most luxuriantly. It bears trimming into all sorts of shapes, and makes the prettiest hedges I have ever seen. In addition to the richness of its evergreen foliage, it is doubly attractive in winter when adorned with its bright red berries; the long luxuriant branches thus richly ornamented are much used for interior decorations, producing admirable effects. Shortly my attention was riveted by a lovely evergreen, with an enchantingly soft foliage, about ten or twelve feet high, and eight or nine in diameter. I had seen small specimens of it in the north, and recognized it as the beautiful Deodar Cedar. It was a lovely sight to watch the graceful waving of its branches in the morning breeze, and the effect of the sunlight on its silvery and hoary green foliage. Subsequently I saw many others of the same species, some of them admirable specimens. The Evergreen Magnolias also grow to a limited size here, alongside of most of our northern shrubs and trees. Beautiful specimens of some of the dwarf forms of the Arbor Vitæ were met with, also examples of several of the interesting variegated forms of the Japanese Euonymus. A few of the residences of the wealthier inhabitants are surrounded by neatly kept lawns, with trees and shrubbery tastefully arranged; but when compared with what might be done in a climate so favorable, it must be admitted that there is plenty of room for improvement.

During my stay I called on Dr. Samuel Hape, who is one of the most enterprising nurserymen in this district, from whom I learned that fruit growing was on the increase in Georgia. In season, peaches are abundant and cheap, and large quantities are raised for export. Plums also are somewhat grown but are subject to be attacked by the Curculio much as they are with ourselves, and the practice of jarring the trees and collecting the insects seems to be too troublesome an undertaking to find much favor here. The Doctor esteems the Wild Goose as a valuable sort, as it is, he says, less liable to attack from the Curculio than the more highly flavored varieties, and for the same reason he speaks well of the Newman's, Decaradeuc's,

Harper's, Brill, and Hattie, all descended from the Chickasaw Plum.

Among the apples especially recommended for market orchards here, are many unfamiliar sorts. For example, among the winter varieties are the Hockett's Sweet, Mangum, Nickajack, Romanite, Shockley, Yates, Santa and Black Warrior. Pears suffer much from blight, and hence are not very extensively grown; but grapes and small fruits are generally cultivated and usually give good returns; figs also thrive well in the open air in this section. With the mild and genial climate which middle Georgia enjoys, fruit culture of every sort should succeed. The present condition of society, however, is not very favorable to the development of industrial interests of any sort. The dignity of labor is much undervalued. By many of the whites manual labor is looked upon as in some measure degrading; and the negroes as a class are so lazy that they do not care to exert themselves unless their necessities drive them to it, and then their wants are so few that an occasional trifling effort will furnish them with such subsistence as will content them. These blacks are the most jovial people one can meet with, always light hearted and merry, no matter how great their poverty; often without a cent in their pockets and hardly knowing where their next meal is to come from, nevertheless they are as frolicsome as young lambs, and very much prefer basking in the sunshine, standing around the railway stations or steamboat wharves to engaging in any active employment.

A morning ramble with a friend brought us to a part of the city where the "poor whites" rendezvous, who raise small quantities of produce in the mountainous parts of Georgia and the adjoining State of Tennessee, and bring their crops here to market. Finding one of these remarkably slow looking people, who had just arrived with a few bushels of apples in his waggon, we ventured to interview him. We found that he had left his home, some hundred miles distant, eight days previous, with thirty bushels of apples. Some he had sold on the way at one dollar per bushel, the others he expected to sell here at seventy-five to eighty cents. The varieties he had were the Limbertwig, Abram and Howard or Nickajack, all very good sorts, but they had been poorly kept, and were not very presentable. Having finished his marketing and purchased his supplies, he would trudge his weary way over bad roads for another eight days before he could reach his distant home. These poor creatures enjoy but few comforts, and many of them seem to be less intelligent than the negroes.

We met with many kind friends during our stay here; found the southern people extremely hospitable, and we left Atlanta, taking with us very pleasant recollections of our visit.

An afternoon train brought us, about dusk, to another thriving city, Macon, where we took a sleeper on a night train for Brunswick, in the southern extremity of Georgia. Daylight disclosed great changes in the character of the vegetation, which now began to assume a tropical aspect as we approached the land of flowers.

ENQUIRIES ABOUT GOOSEBERRIES.

An esteemed member of the Association inquires, "Which gooseberry do you consider the best to plant for market purposes, Smith's Seedling or Downing's;" also, "do you know anything of a gooseberry called American Amber, and if so, what are its characteristics and value as compared with the above?" "Is it desirable to plant any of the English kinds for market, and if so which?"

In replying to the first enquiry, we can only say that we have not sufficiently tested the Smith's Seedling, or as it is usually known among horticulturists, "Smith's Improved," to speak positively of its merits as a market berry. The Downing we have cultivated for some fifteen years, and have tested it thoroughly, and can confidently recommend it as a very valuable variety, and profitable for market. With our present knowledge of the two sorts we would plant the Downing for profit.

We are not able to throw any light on the American Amber Gooseberry. It is not mentioned in any of the catalogues of leading American nurserymen in our possession, nor have we noticed any description of it in any of the American horticultural publications.

The English varieties of gooseberry are subject to mildew in our climate. In some seasons the fruit is completely coated with a tough fungoid growth, and the leaves are destroyed. Some mitigation of this evil is thought to be obtained by planting in very rich and strong soil, by keeping the ground well mulched and plentifully supplied with salt, and thinning out the branches, so as to admit of free circulation of air. But with all this, there is too much uncertainty about escaping the mildew to make the planting of English sorts for market a promising investment.

The Canadian Horticulturist.

VOL. II.]

AUGUST, 1879.

[NO. 8.

SOME GERANIUMS OF RECENT INTRODUCTION.

MADemoiselle AMELIA BALTET. When The Ghost was sent out it was so much better than Aline Sisley that it was received with great satisfaction, the blooms being more double, better formed, and of a purer white; but the hot suns of our summer days soon change the ivory white to a pink, and it is only in the early part of the season that it retains its ghostly character. A pure double white that will retain its whiteness under the blaze of our summer sun is still to be found, but we have in M^{lle} A. Baltet the nearest approach to this that has yet been brought to our notice. The flowers are more symmetrical than those of The Ghost, of a purer white, and become more slowly tinged with pink as they fade, and that less pronounced in depth of color. In the early part of the season it retains its snowy purity for a long time. The leaves are of a light green, distinctly but not broadly zoned; the trusses are of medium size, compact, and borne well above the foliage. It is the best double white we have seen.

DEPUTY VARROY fills the same niche among the doubles that Master Christine does among the singles, the color of the flowers being of the same inimitable shade of lovely pink. The leaves are broadly zoned, trusses of good size, and habit of plant excellent. It is a very beautiful and conspicuous flower.

J. C. REDBARD does not seem to possess any particular excellence. It is a double scarlet, in no way better than many others, and not at all equal to some of the older sorts.

EMILY LAXTON is a very brilliant velvety scarlet; the flowers are very large, and the truss something enormous. The leaves are of a deep green, not zoned; the plant of good habit, and a free bloomer. We can commend this as one of the best of the double scarlets.

HENRI BEURIER is the best orange-salmon double we have seen; the flowers are well formed, and the shade is deep and rich. The leaves are deep green with a broad dark zone, and the plant has a fine compact habit.

MADAME NEURY has much the same coloring as Purple Prince, and may be well said to be that variety with double flowers. This peculiar blending of bright and dark scarlet and red gives the flowers a very attractive appearance. The trusses are large, and well above the rich green foliage, which is not zoned.

NEMIE has the same coloring as Mad Dutho Bertrand, which has been so much admired and sought after on account of its peculiar shade of pink suffused with violet. The light-green leaves are faintly zoned. The plant is of good habit, producing its medium sized trusses in great profusion.

METEOR FLAG is very like Jewel, both in color and form of flower, and habit of growth; a little

larger and more robust, and may on that account be preferred where size is an important consideration. To our taste the doubles of this style are the most beautiful, each flower being formed like a half opened rose in miniature, and bearing the most minute inspection.

M. GELEIN LOWAGIE has certainly a most rich and glowing vermilion shade of scarlet, and ranks among the most dazzling of the doubles. Its trusses are large and conspicuous, borne well above the leaves, which are marked with a broad dark zone.

MRS. JOHN FREED was raised by a member of our Association, who named it after his estimable wife. It is one of the most useful doubles in cultivation for boquets and floral decorations, its clear bright scarlet giving a brilliant effect, while its usually medium sized trusses admit of its being readily introduced wherever the color is wanted. Each pip is mounted upon a footstalk of sufficient length to admit of its being taken out of the truss and used in the formation of button-hole boquets, where the flowers appear with good effect, and endure for a long time.

CHARLES GLYM will perhaps hardly rank among the doubles of recent introduction, but it is one of such peculiar and exceeding brilliancy and effectiveness that it deserves to be kept in remembrance. There is just a dash of orange shade through the scarlet, enough to give such vivacity to the coloring as to make it one of the most showy and attractive of all the geraniums. The trusses are of good size, borne up on stout stalks, and produced in great profusion. It is one of our favorites.

Turning now to the single flowered varieties, which—though having not the same persistence of bloom, and therefore not as desirable as the double for cut flowers and boquets—are better adapted for bedding out, and are more showy as pot plants; we will name a few that seem to possess some desirable quality or character that makes them worthy of attention.

BEAUTY OF KINGSESSING. We have been much pleased with this, for it is indeed a beauty. The petals are nearly white when newly open, shading towards the centre from light pink to salmon, the upper petals veined with salmon. As the blooms acquire age the white changes to a most delicate light-pink. The trusses are very large and produced in great profusion. The habit of the plant is good, the leaves slightly zoned, and when it is well grown and flowered it makes a most beautiful pot plant.

TRIUMPHANT is somewhat related to the foregoing in general appearance, though quite distinct. The three lower petals of each flower are white delicately tinged with blush, while the two upper petals are a light salmon beautifully feathered with rose. The trusses are large and numerous, borne well above the leaves, which are of a deep green with a broad black zone. It is of no value for bedding out, but makes a very showy and beautiful window plant.

DAZZLER is worthy of its name. To say that it is an improvement on Jean Sisley or Sir Charles Napier would hardly be correct, for each of these holds a place of its own; and yet it is very like them both, but with a distinct rich velvety scarlet so set off by its clear white eye, and lit up with such a peculiar brilliancy that you say it is quite distinct from either. The flowers are of perfect form, borne in full round trusses, which are very abundant. We value it exceedingly.

NELLIE COOKE is an exceedingly rich bright salmon flower of perfect form, contrasting beautifully with the deep-green broadly zoned leaves. The trusses are not large but very numerous, and when the plant is well flowered it presents a very attractive appearance.

APPLE-BLOSSOM has been well named, for it is the very counterpart of some of our pink-and-white apple blossoms. The trusses are very large and finely formed, and the plant, when in full bloom, arrests the attention at once by its peculiar, delicately tinted flowers. This is sure to be a favorite variety with all geranium growers for window decoration. The leaves are a deep green, with broad dark zone, which heighten the effect by their contrast.

LORD BELPER is usually described as a blood-red, but in reality it is a strange blending of Arthur Pearson and Ianthe, quite different from any other geranium, and well worthy of a place in a choice collection. The leaves are light-green, faintly zoned, the habit of the plant good,

free-flowering and compact.

PALLAS does not seem to us to be any improvement on Master Christine, indeed we prefer the older sort.

CROMWELL, though good, is not equal to Sir Chas. Napier, which it closely resembles.

HAPPY THOUGHT is now well known to all of our readers, and continues to be admired for its novel leaf variegation, a creamy-white centre with green margin.

DISTINCTION has not become as popular as Happy Thought, though its very narrow black zone sets off the deep green of the leaves in very pretty style.

WINTER PROTECTION OF GRAPE VINES.

A member residing at Stratford writes to the HORTICULTURIST for our views on wintering grape vines in an elevated region like Stratford; whether laying them down, or leaving them exposed with some protection around the roots would be the better way.

To this we can only reply, that our experience leads us to prefer taking the vines down from the trellis and laying them upon the ground, and, if it be practicable, it is very advantageous to cover the vines with a few evergreen boughs. A variety of grape that will not pass the winter safely in this way had better be dug up, and a more hardy kind put in its place. There are a number of hardy vines now in cultivation which ripen their fruit early, and which will yield a good crop of grapes and ripen them thoroughly in the climate of Stratford. We should expect to succeed with the Concord, Creveling, Eumelan, Telegraph, Champion, Wilder, Massasoit, Martha, Burnet, and Moore's Early.

WINTER APPLES AT BARRIE, FOR MARKET.

A member residing at Barrie asks, "What apple would you recommend to plant in quantities for market as winter apples, in a locality like this, where it appears to be uncertain whether the Baldwin and Rhode Island Greening are sufficiently hardy?"

We are still seeking for the varieties for which enquiry is made by our esteemed correspondent. There are sorts which are sufficiently hardy to endure that climate and to bear good crops of fruit, but—there is a *but* to most if not to all. The Red Astrachan, Tetofsky, Alexander, Duchess of Oldenburg, St. Lawrence, &c., are all sufficiently hardy, but they are not winter fruits. Perhaps the most profitable of all the hardy winter sorts may be the Snow Apple. We say perhaps, because in this climate and soil the fruit is very apt to be spotted with small black spots in such numbers as frequently to destroy the value of the fruit, rendering it entirely unfit for market. If it proves on enquiry about Barrie that the fruit is free from blemish, and that the trees yield as large crops as they do usually wherever planted, there is no doubt about the profitable character of the investment. The demand for well grown Snow Apples, free from blemish, has never been met. But if the fruit is subject there to those black spots that so often ruin it here, do not plant this variety for market, it will not pay.

Next to this we should expect to find the Golden Russet, the one with light colored speckled shoots, sufficiently hardy and productive to be a profitable sort. Here it does well, bears well, yields medium sized, fair, handsome apples, which sell well in the English and Scotch markets.

The proprietor of the celebrated Beaver brand of Canadian apples says that it is one of the most profitable varieties in his orchard. Inquiry about Barrie ought to reveal how well it succeeds there, whether there proves to be any thing in the soil or climate of that section which lessens any of the good qualities of this variety as grown elsewhere. The tree is quite hardy and productive about Trenton, Belleville, and that section, and is there planted in considerable quantities for market.

The Ben Davis is a very hardy, vigorous, and productive tree; the fruit is of good size and handsome appearance, and keeps well. It is quite possible that this would prove a profitable variety, but—and here again comes the *but*—the quality of the fruit is not of the highest order. However, that may not be a serious objection; many of the most popular fruits in our markets are not fruits of the highest excellence of flavor. It has the advantage of beginning to bear early, and blooms late, so as to escape the late spring frosts, and is a popular variety in the Western States.

The Walbridge (Edgar Red Streak) is one of the very hardy kinds that has lately been brought into notice, which is said to be productive and a late keeper.

The Pewaukee is another of these very hardy sorts which keeps through the winter, but we do not yet know enough of them here to give an opinion of their value for profitable market orcharding. In time there will doubtless be found some varieties more hardy than R. I. Greening and Baldwin that can be profitably planted for market purposes in the climate of Barrie, but we must not forget that there are also climatic boundaries to successful market orcharding, and the man whose orchard lies within these limits will possess advantages that will enable him to grow more and better fruit than can be grown elsewhere, and hence will find his orchard more profitable.

THE JAPANESE PERSIMMON.

This fruit has been extensively advertized of late, not only under the name given above, but under the more pretentious title, “Fruit of the Gods.” It is heralded as the popular fruit of Japan and of China, as coming into bearing very early, and as being very ornamental when loaded with yellow or vermillion fruit as large as apples. The flavor is said to be something so unique and delightful that any attempt at description must fail to give any adequate conceptions of its deliciousness. No one seems as yet to have eaten a specimen in the fresh state; only dried samples that have come to us through the manipulations of oriental conservers of fruits have been tasted, so that no one knows how much of the flavor is to be set down to nature and how much to art.

Nevertheless, it is very possible that horticultural enterprize will be quite equal to the task of bringing this highly praised fruit to the attention of Canadian planters, and that with the high-colored pictures of so showy a fruit, and the high-colored descriptions of its delicious flavors, some may be tempted to invest a few dollars to secure so valuable a prize. Whether it will prove to be a prize may very much depend upon its ability to endure our climate, and in order that the readers of the CANADIAN HORTICULTURIST may have all the light we can give them on this subject, we submit for their perusal some communications bearing on this point, which appeared in the June number of that excellent publication the *Gardeners' Monthly*, published in Philadelphia.

E. Manning, residing near Harrisburg, Franklin County, Ohio, writes to the Editor as follows: “Last spring I ordered two trees of different varieties, carefully planted them, and they both

made a moderate growth. Last fall, before the cold weather set in, I turned a flower barrel over each. Both of the plants were worked on the native stock. I have examined both; the entire top and the whole graft is killed down to the junction of the graft and stock, which was four inches from the ground. Below the graft the native stock was as green as ever."

The Editor of the *Gardeners' Monthly* adds that "four years ago a Philadelphia friend wishing to get ahead with a stock for nursery purposes secured a dozen. They grew admirably during the summer, but were all killed but one the succeeding winter. This was however referred to the extraordinary severity of that season. We believe that the one plant is still living, though it has not been risked to the 'full severity of the winters' since."

Another correspondent's letter appears in the same number of the *Gardeners' Monthly*, in which he states that he purchased a dozen plants, kept one under protection and left the rest exposed to the winter. Those left out all died. The one kept under protection had last fall attained to about an inch in thickness of trunk, and was left out last winter as other trees without protection. This spring it was dead, root and branch. This was in the vicinity of Philadelphia.

These are not favorable indications of sufficient hardiness in the Japan Persimmon to enable it to endure the cold of our Canadian winters. Indeed, if it will not endure the climate of Philadelphia, there is no hope that it will succeed here. The readers of the CANADIAN HORTICULTURIST may therefore save themselves disappointment and some few dollars if they decline for the present to invest in trees of the Japan Persimmon, or Fruit of the Gods.

SOME OF THE NEW STRAWBERRIES.

The writer had occasion to visit the fruit gardens of one of the Directors recently, Mr. A. M. Smith, of Drummondville, and embraced the opportunity thus afforded of examining some varieties of the Strawberry which are of recent introduction and comparing them with our older sorts.

THE NEW DOMINION, which originated at this place, in the hands of Mr. Biggar, proves to be an excellent variety for a near market. It does not yield as many berries as the Wilson under the same treatment, but more of the berries attain to a large size, and on this account there will be very nearly or quite as many quarts of berries on an acre. The fruit does not ripen quite as early as the Wilson. The bright color of the berries and their uniform good size make them very attractive.

THE MONARCH OF THE WEST does not seem to be a heavy cropper, and the berries when ripe do not color up well, there being usually a white spot at the point of the berry, giving it the appearance of not being fully ripe. The size is good, and the flavor, but it is not a berry to plant for profit.

THE GREAT AMERICAN is a very large round berry, showy, and bearing a good crop, though by no means equal to the Wilson as a cropper. It will require to be planted in larger quantity and observed for a year or two before a just estimate can be made of its worth.

THE CRESCENT SEEDLING does not seem to maintain its western reputation for great yield of fruit, though the yield of runners fully equals all that is claimed for it in this particular. In Ohio it is said to bear enormously with but little culture, not requiring to have the runners kept down, which indeed multiply so fast as to take possession of the ground and choke out the weeds.

In addition to these there was also a considerable plantation of a variety not yet sent out, which originated on Mr. Smith's grounds, and seems to have some points of interest. The vines

seemed to be healthy and hardy; the fruit in size, form, color and flavor, to be exactly like the Wilson, so that it seemed to be impossible to distinguish it from that variety, put it ripened a few days earlier. The crop does not all ripen up before the Wilson, but one or two pickings can be taken from this before the first berries of the Wilson are ripe enough to be gathered. This quality of early ripening is valuable, and it is desirable that this new sort should be thoroughly tested on account of its promise of giving us ripe fruit in paying quantity a few days earlier than we have been wont to get it. We suggest that Smith's Early would be an appropriate name for this new sort.

TREE AGENTS.

Considerable attention has of late been given by the agricultural and rural press to the doings of a class of men usually known as tree agents, men who travel through the country from house to house soliciting orders for trees and plants, both fruit bearing and ornamental. The articles that have appeared—some of them at least—have not been very discriminating. In some, these agents have been represented as great public benefactors, who at no little pain and weariness take the trouble to go about the country introducing fruits and flowers, thus scattering blessings along their path. In others they are denounced as a set of liars and swindlers, deceiving the people and cheating them out of their hard earnings by selling them worthless trash. These laudations and denunciations show that public attention is being roused upon the subject, and it seems well that the CANADIAN HORTICULTURIST should take this opportunity of contributing what it may be able to give towards a fuller understanding of this matter. There is a measure of truth and justice in both the praise and blame that have been bestowed upon tree agents. They have been the means of calling the attention of men to the planting of improved fruits, and to the ornamentation of their grounds with flowering trees and shrubs, and the result has been, beyond question, a more rapid and wide-spread diffusion of a better class of fruits, and of an improved taste for home adornment than would have taken place but for their labors. And on the other hand there have been, and doubtless may be now found among their number, men who richly deserve all the denunciations that can be heaped upon them—men who do not scruple to give new names to old things in order to get a larger price for them,—who do not hesitate to make false representations whereby they may dispose of articles absolutely worthless to the purchaser.

The history of the tree agency business seems to be on this wise. Nurserymen found that in order to sell their productions they must bring them to the personal notice of those who would naturally become purchasers. It was not sufficient to advertise in the newspapers that they had fruit and ornamental trees for sale. Many men had but very imperfect knowledge of the value of good fruit; it was necessary that they should be persuaded that it was to their interest to purchase these trees, and in no way could that be done so well as by a personal interview. Hence nurserymen adopted the expedient of hiring men to go out and canvass the country, to tell expected customers about the fruit trees they had for sale, and persuade them to purchase and plant them. In this way they succeeded in disposing of their stock of trees, enlarging their business, and gradually creating an increased taste for good fruit, and for ornamental trees and plants, but with this result, we believe, that the great bulk of their sales were effected through the travelling agents.

As the nurseryman's business increased and more extensive plantations were made, he found that his time and attention were necessarily absorbed by his cultivations, and he was

prepared for the next step in the history of this business. As the agents acquired skill and experience in selling, they naturally began to consider whether they could not turn that skill to some good account for their own benefit. The idea of taking the selling into their own hands, and paying the nurserymen for whom they sold a wholesale price, was a very obvious one, and while the skilful salesman increased his gains, the nurseryman was relieved of the detail of the agency business; and arrangements were made whereby the agent continued to represent the nursery from which the trees came, but paid himself by the profit he might make above the stipulated wholesale price.

The further history of the tree agency business is but the natural outcome of the change we have just indicated. Agents acquired a certain reputation for furnishing satisfactory trees; the purchasers had dealt only with the agents, and though the credit for the quality of the trees was strictly due to the nurserymen, yet the relation between the grower and buyer was of that distant nature that it failed to bind them together, and the agents very readily began to inquire if they could not find some place where they could buy cheaper. Relying upon the reputation gained for them by the trees they had delivered, they solicit orders in their own name, and go into the market to buy where they can buy cheapest. By this means a class of middle-men has sprung up in the tree business, who supply purchasers with trees, the purchaser not knowing from what nursery his trees come, and the nurseryman equally ignorant of the person who plants what he has grown. This system of selling by men who do not grow the trees has now assumed a peculiar feature, and extensive co-partnerships have been formed by them, under the style of which they advertize themselves as nurserymen, issue catalogues like those of nurserymen, hire canvassers to go out and sell for them as though they were the growers, and by doing a large business, are able to buy a part of their stock in one nursery and a part in another, as they find most to their advantage.

This then is the present position of the tree agency business, and now we have representatives of all these different classes of tree agents at work among us; the agent who is sent out by the nurseryman, the agent who represents the nursery from which he buys at wholesale, the agent who does not in fact represent any particular nursery, but sells on his own account, and the agent who is selling for a firm of tree brokers styling themselves nurserymen.

Unfortunately there is no system of selling trees that can not be used by unscrupulous men to their own immediate gain, and the defrauding of those who purchase of them. The method of buying that is least likely to result in disappointment through dishonesty of the seller, is where the buyer purchases directly of the producer. It is usually found to be the fact that the desire to maintain a good reputation in his business transactions, for the sake of his business, if no better motive, will induce the nurseryman to deal honorably with the purchaser. Next to dealing directly with the nurseryman comes the purchasing through his accredited salesmen. The difficulty here lies chiefly in knowing certainly that he is truly an agent of the nursery. Most nurserymen supply their agents with a certificate to shew that they are sent out by them, but even these have been forged. In purchasing from those who are not representing any particular nursery, but are dealers or brokers in trees, of course confidence is reposed only in the agent himself, and the purchaser relies solely upon him to bring such trees in kind and quality as he orders.

That those who buy through tree agents are liable to be imposed upon by dishonest men has been true in the past, and will be true as long as such men exist. They are to be found in every calling, but there is probably no business which offers greater temptations to an unscrupulous man than tree selling. Such a man soon learns that his purchasers are very poorly informed on the subject of trees, and know little or nothing of the character and qualities of either the tree or the fruit, and from this fact are ready to accept any representation he may make concerning either. The ignorance and credulity sometimes manifested are really something

marvellous, equalled only by the unblushing impudence of the men who practice upon them. What man who had any information concerning the effect of frost upon peach trees would have been deceived by the representation that by grafting the peach upon a certain kind of stock it was made hardy, so that it would thrive and bear large crops of fruit in such places as the coldest parts of the Counties of Huron, Grey and Bruce? And yet it is true that large sales were made of peach trees said to be worked upon this wonderful stock at very high prices, ranging from fifty cents to a dollar per tree. It is such ignorance as this that enables men of no principle to sell at high prices such worthless things as were palmed off under the name of Utah Hybrid Cherry, and to sell old varieties of hardy trees at high prices as though they were new introductions. This want of information in regard to some of the most simple matters connected with the planting of trees affords opportunity for deception and fraud that ought not to exist, and though it is no excuse for dishonesty in the seller, is in this day of opportunity for information quite unpardonable in the purchaser. The Fruit Growers' Association has been supplying its members at the nominal cost of one dollar per year, by means of its Annual Reports and through the pages of the *CANADIAN HORTICULTURIST*, with such information as will enable them to be on their guard against imposition, but unfortunately a very small proportion of those who purchase trees are members, or ever see what has been published. Many decline to become members to save the dollar, and before the year is out are defrauded of several dollars by buying at a high price some old variety of tree or plant under a new name, that they would not have bought if they had read the publications of this Association. Dishonest men find both profit and pleasure in practicing upon ignorance, and grow bold in their dishonesty as they learn how easily men are duped.

But notwithstanding all the deceptions and frauds that are practised in this way, it is not true that there are no honest tree agents. There are men who sell trees who would scorn to make any representation which they did not believe to be true. From such men it is safe to buy. There is need of caution always in buying from strangers, but when a tree agent has established a reputation for fair dealing he deserves the confidence reposed in him. A rogue can not continue to sell in the same section of country for any length of time, but an honest salesman can continue to travel over the same ground for many years, the lapse of time only making him better known and increasing the confidence of his customers in his honesty. It is not to be expected that the business of tree selling will be carried on without tree agents. They are an established institution among us, and hold a position in this business analogous to that of the commercial traveller. Prudent caution on the part of purchasers with regard to the persons from whom they buy, and the acquisition of some information from reliable and disinterested sources on the subject of trees and fruits, and especially by keeping themselves informed on the introduction of new fruits, and the changes time and more extended experience are making in the estimation in which the different sorts are held, will enable those who buy to escape the mortification and disappointment which so many have experienced, and save them from the loss of time and money.

USE OF THE FEET IN SOWING AND PLANTING.

At the last meeting of the American Association of Nurserymen a paper was read on this subject by Peter Henderson, of New York, which is of so much practical value that we

recommend it most heartily to the attention of our readers. He says, "I candidly admit that although I have been extensively engaged in gardening operations for over a quarter of a century, I did not fully realize until a few years ago how indispensable it was to use the feet in the operation of sowing and planting. Particularly in the sowing of seeds, I consider the matter of such vast importance that it can not be too often or too strongly told. We sow annually about four acres of celery, cabbage and cauliflower, which produces probably five millions of plants, and which we never fail to sell mostly in our own immediate neighborhood to the market gardeners, who have many of them better facilities for raising them than we have, if they would only do as we do, firm the seed after sowing.

"It is done thus: After plowing, harrowing and leveling the land smoothly, lines are drawn by the marker, which makes furrows about two inches deep and a foot apart. After the man who sows the seed there follows another who with the ball of the right foot presses down his full weight on every inch of soil in the drill where the seed has been sown, the rows are then lightly leveled longitudinally with the rake, then a light roller is passed over it, and the operation is done. By this method our crop has never once failed, and what is true of celery and cabbage seed is nearly true of all other seeds requiring to be sown during the late spring or summer months.

"On July 22nd, 1874, as an experiment I sowed twelve rows of sweet corn and twelve rows of beets, treading in after sowing every alternate row of each. In both cases those trod in came up in four days, while those unfirmed remained twelve days before starting, and would not then have germinated had rain not fallen, for the soil was dry as dust when planted. The result was that the seeds that had been trodden in grew freely from the start, and matured their crops to a marketable condition by fall, while the rows unfirmed did not mature, as they were not only eight days later in germinating, but the plants were also to some extent enfeebled by being partially dried in the loose dry soil.

"This experiment was a most useful one, for it proved that a corn crop grown in the vicinity of New York as late as July 22nd could be made to produce roasting ears in October, when they never fail to sell at high rates; but the crop would not mature unless the seed germinated at once, and which would never be certain at that dry and hot season unless by this method. The same season in August I treated seeds of turnip and spinach in the same way, those trod in germinated at once and made an excellent crop, while the unfirmed germinated feebly, and were eventually nearly all burned out by a continuance of dry hot air penetrating through the loose soil to the tender rootlets.

"Of course this rule of treading in or firming seeds after sowing must not be blindly followed. Very early in spring or late in the fall when the soil is damp, and no danger from heated dry air, there is no necessity to do so, or even at other seasons the soil may be in a suitable condition to sow, and yet be too damp to be trodden upon or rolled. In such cases these operations may not be necessary at all, for if rainy weather ensue the seeds will germinate of course, but if there be any likelihood of continued drouth the treading or rolling may be done a week or so after sowing, if at such a season as there is no reason to believe that it may suffer from the dry hot air."

Now if firming the soil around seed to protect it from the influence of a dry and hot atmosphere is a necessity, it is obvious that it is even more so in the case of plants whose rootlets are even more sensitive to such influence than dormant seed. Experienced horticulturists are less likely to neglect this than in the case of seeds, for the damage from such neglect is easier to be seen, and hence better understood by practical nurserymen, but with the inexperienced amateur the case is different. When he receives his package of trees he handles them as if they were glass, every broken twig or root calls forth a complaint, and he proceeds to plant gingerly, straightening out each root and sifting the soil around them, but he would no

more stamp down that soil than he would stamp on the soil of his mother's grave. So the plant in nine cases out of ten is left loose and wagging; the dry air penetrates through the soil to its roots, the winds shake it, it shrivels up and fails to grow; then comes the anathemas on the head of the unfortunate nurseryman, who is charged with selling him dead trees or plants.

About a month ago I sent a package of a dozen roses to a lady in Savannah. She wrote me a woeful story last week, saying that though the roses had arrived seemingly all right, they had all died but one, and what was very singular, she said, the one that lived was the one that Mr. Jones had stepped on, and which she had thought had surely been crushed to death, for Mr. Jones weighed two hundred pounds. Now we do not advise any gentleman of two hundred pounds putting his brogans on the top of a tender rose plant as a practice conducive to its health, yet if Mrs. Jones could have allowed her weighty lord to have pressed the soil against the roots of each of her dozen roses, I much doubt if she would now have had to mourn their loss.

THE FIG.

BYP E. BUCKE, OTTAWA.

I am glad to see in the *HORTICULTURIST* that attention is being drawn to the cultivation of the fig. The summer heat of this Province is admirably adapted to the ripening of this fruit, and if only the frost of winter can be overcome by soil protection there is no reason why its cultivation should not be a success. Unfortunately the fig is a shrub with a very brittle stem, and if it can be laid down as Mr. Needham states, it will require to be very carefully done, as it is not nearly so pliable as the grape vine, or even as the raspberry. This method of protection I attempted with the peach but signally failed. The trees came out fine and green in the spring, but the air soon dried them and they never leafed out; however, this does not prove that the fig will not stand after being uncovered quite as well as the grape. I understand the fig may be grown in the open air, dug up in the autumn and heeled-in in a cellar,—similar to the mode some of the Michigan nurserymen have of keeping young stock through the winter,—and planted in the spring without the least harm either to the tree, or in any way retarding its bearing fruit. I can bear good testimony to the plant growing readily from cuttings, as I obtained some of these from a friend about eight inches long, and set them 10th June last; the fig from which the cuttings were taken was in full leaf; the leaves dropped from the cuttings, but some are now, 10th July, in good leaf, and none failed to grow. I feel certain that should I not succeed in growing figs here, as I intend trying, they could be grown near the Rondeau, on Lake Erie, or the islands off Point Pelee. During my stay in the south of England, in Devon and Dorset, I have often seen the fig cultivated both as a hedge or screen, and also trained on the garden walls.

In England it bears two crops a year and is most prolific. Not being aware at that time that there was more than one variety, I made no enquiry as to the kinds grown. In Weighmouth, Dorset, they are regularly sold on the streets fresh picked from the tree, but I think in this way the taste, like that for the Tomato, must be an acquired one, as they have a sickish flavor to my palate, however they make a charming preserve, and are exceedingly wholesome either dried or when gathered ripe. I trust that Mr. Needham's remarks may draw attention to this very prolific and interesting fruit, and that our western friends will turn their attention to the new industry;

and if after a trial it is found that the plant can be laid down and covered like the grapevine, I make no doubt it will prove a great boon to all classes of the community.

The Canadian Horticulturist.

VOL. II.]

SEPTEMBER, 1879.

[NO. 9.

THE SUMMER MEETING.

According to previous announcement, the Summer Meeting of the Fruit Growers' Association of Ontario was held in the Town Hall, Peterboro', on the 16th July, 1879. A goodly number assembled at ten o'clock on that day, and manifested much interest in the proceedings. There was a display of summer fruits, consisting principally of raspberries and gooseberries, relieved by a very tastefully prepared floral design, in which were many choice and beautiful flowers. This design, we believe, was prepared by one of the ladies of Peterboro', who takes a deep interest in the work of the Association.

President Burnet exhibited to the members the medals which had been awarded to the Association by the American Pomological Society and at the Centennial Exhibition.

After the usual routine business, the President announced that the Rev. V. Clementi, of Peterboro', had very kindly prepared a paper upon "Fruit Growing in the County of Peterborough", and suggested that it be read before proceeding to the discussion of the subjects proposed for the consideration of the meeting. The members listened to the reading of Mr. Clementi's paper with very marked interest, and at its close thanked him most cordially, and requested that it might be published in the CANADIAN HORTICULTURIST, and in the Annual Report.

Mr. Clementi remarked that his paper was not as complete as he desired, owing to the great difficulty he had found in gathering the information which he expected to be able to obtain when he undertook to prepare it, yet such as it was, he was very happy to place it at the disposal of the meeting.

The information given in this paper is just such as the Association seeks to secure, and will be found of great service to those who wish to plant fruit trees in that section. It is as follows:

FRUIT GROWING IN THE COUNTY OF PETERBOROUGH.

BY REV. V. CLEMENTI.

The object the Fruit Growers' Association has in view in visiting various sections of the Province in the course of its periodical peregrinations, is, I apprehend, of a two-fold character:

1st.—To give the localities visited the benefit of such advice as the experience and intelligent research of its more prominent members may enable them to furnish, and

2nd.—To ascertain by enquiry, and by the inspection of such specimens of fruits as may be submitted for judgment, what kinds are most likely to meet with success in their cultivation in the respective districts, taking into consideration the nature of the soil and the influences of the climate.

And as this is the first occasion of our being favored with a visit by the Association, and as the Town of Peterborough is situated at the distance of thirty miles north of the Grand Trunk R. R., and only on a branch of the Midland, and is consequently but rarely visited, save by those who have business to transact here, or by those in search of beautiful scenery, such as is afforded by our chain of lovely lakes, or by sportsmen in search of game, which may be met with in abundance in our back townships, I venture to occupy your time for a few moments with the briefest possible description of our locality.

The Town of Peterborough is situated on the west bank of the river Otonabee, in the north-east angle of the Township of Monaghan, and, with the county, constitutes a portion of the old Newcastle District. The soil on which the town is built is partly gravel and partly sandy loam, the gravelly portion unfavorable to the production either of fruits or flowers.

The Township of Smith, on the west side of the river, is one of the most valuable and flourishing townships of our county, comprising a large percentage of very excellent land, the soil being principally clay loam, with a subsoil of clay. In some sections it is loamy and calcareous, peculiarly well adapted, where the limestone is not too near the surface, to the culture of fruits.

On the east side of the river is situated the important Township of Otonabee, containing also much good land, and a soil similar to that of Smith. Both these townships, as well as the Township of Monaghan, are exceedingly favorable for the cultivation of apple trees; indeed, some of the finest apples I have ever seen were produced in the Township of Otonabee, and I cannot but express my regret that the primary visit of the Association to this county had not been paid in the autumn, when we could have placed upon our table a collection of that most useful of all fruits, the apple, such as we flatter ourselves would have contrasted not unfavorably with the collections shown in those districts more especially claiming and securing your notice.

I have endeavored to obtain from those farmers in our neighborhood whose orchards are the best managed, and whose fruits exhibit the strongest indications of such management, a list of apple trees most likely to succeed in the peculiar soil and under the climatic influences of our county. At our Central, our County, and our Township exhibitions—and I may, *en passant*, express my firm belief, founded on no inconsiderable experience, that those exhibitions are of far too frequent occurrence, so much so that our time, our energy, and our money, are, in many instances, frittered away, and our shows become less attractive and less valuable as instructors to the people. At some of those many exhibitions, I say, very superior fruits are often placed

upon the tables, but when I inquire as to the circumstances under which those fruits are produced, I receive very meagre and unsatisfactory replies to my appeal for information.

Three farmers, however, residing in the Township of North Monaghan, within a very few miles of the town, have been good enough to furnish me with lists of products of their orchards, and from them I gather that the following kinds may be grown in our county with the best prospect of success:—

Northern Spy, one of the best keeping apples,	Winter.
Fameuse, or Snow Apple,	Winter.
Red Astrachan,	Summer.
* Ribston Pippin, a shy bearer,	Winter.
* Golden Pippin, Carver obtained five barrels from one tree,	Winter.
Beauty of West,	Autumn.
King of Tompkins County, fine,	Winter.
* Roxbury Russet,	Winter.
* English Russet,	Winter.
* Pomme Grise,	Winter.
Pine Apple,	Winter.
Summer Queen, extra good,	Summer.
Gravenstein,	Autumn.
Duchess of Oldenburg, Russian apple,	Autumn.
Tetofsky, very early, Russian apple,	Summer.
St. Lawrence,	Autumn.
Colvert, heavy bearer,	Autumn.
Sherwood's Favorite,	Autumn.
* Yellow Bellfleur,	Winter.
Peck's Pleasant,	Winter.
* Rawle's Genet,	Winter.
* Tolman's Sweeting,	Winter.
* American Golden Russet,	Winter.
* Red Canada, fine, one of the best keepers,	Winter.
American Summer Pearmain,	Summer.
Fall Pippin, very fine,	Autumn.
Spice Sweet,	Autumn.
R. I. Greening, a good apple, but too tender for our climate.	
Early Harvest, good apple, but doesn't always succeed with us.	
Cooper's Market, medium apple.	
Rambo, medium apple.	
Early Joe, an inferior apple.	

* Good keeping apples.

Of crab apples, we find the Transcendant and the Montreal Beauty rapid growers and profuse bearers.

This list of apples will probably be considered meagre and imperfect. I may remark, as an excuse for its want of amplitude, that the information I have been enabled to obtain on the subject is scanty too.

I will only add to this portion of my subject, that it is generally allowed by us that a well drained loam soil, lying to the south-east, is the most favorable for orchards. The soil, of course, requires cultivating and manuring, and ashes are found to constitute a good fertilizer. Nor should the mulching of newly planted trees, nor constant pruning, as early as possible in the spring, be neglected. Where it is desirable to secure handsome specimens for exhibition or other exceptional purposes, the thinning out of the fruits, more especially the removal of such as are small or imperfect, must be attended to.

This paper, referring to the fruit growing capacities of our county, would be more imperfect even than it is were I to abstain from noticing the climatic influences to which we are subjected. Now, our climate cannot compare favorably with the climate experienced, as I imagine, by the majority of the more active and energetic members of the Association, who reside south and west of Peterborough, and who are subjected, more or less, to the influence of our inland sea—an influence that tends greatly to modify the winter frosts and the summer heat.

I may, perhaps, be permitted to introduce a few thermometrical readings. During the last winter the mercury, or rather the spirit, which is more reliable than the mercury, ran down to or below zero on twenty-eight nights, the lowest temperature having been 29° below zero on the 28th of February.

Now, although most apple trees can endure this amount of frost if protected, as our fruit trees are, by a thick covering of snow, from the time it makes its first appearance until spring once more “unlocks the flowers,” some of the more tender varieties cannot withstand the attacks of the late frosts in the early summer, and the constant and severe alterations of temperature. To give but two instances of late frosts in this town:—On the 27th of last May the mercury ran down to 30°, and on the 7th of June to 34°. With respect to the variations, I will trouble you with but one example: On the 9th of last April the lowest reading of my self-registering thermometer was 23°, and the highest 68°—a difference of 45° in 24 hours.

And this I conceive to be the reason why we cannot grow peaches, or some of the choicer varieties of pears and plums, with any prospect of a satisfactory result. For instance, Clapp's Favorite is a much admired pear, but I cannot hear of an instance in which it has succeeded in this county, or the neighboring county of Victoria, where, I believe, it has been frequently tried by skilled orchardists.

Our exhibitions, however, prove that some pears, plums and grapes succeed with us under proper treatment. A member of this Association residing within a very short distance of the town, speaks highly of the Flemish Beauty and Bartlett pears. The same gentleman has grafted four hundred pear trees this year. He has also been successful in cultivating the Apricot Plum, the Peach Plum, the Bradshaw, the Lombard, the Washington, Glass' Seedling, with many others, Green Gages and blue plums, with the names of which he is unacquainted. The Apricot Plum is a large greenish-yellow plum, measuring 6-3/8 inches in circumference, and has a very small stone.

The County of Peterborough can by no means claim exemption from the ravages of injurious insects.

The *Galeruca vittata*, commonly called the Cucumber Beetle, appeared on my melon vines in June, in far greater abundance than usual. Being unlike the Potato Beetle, exceedingly active and very wide-awake, it is not so easily captured as its larger and more formidable congener. On

approaching a bed, those beetles that are on the surface of the leaves, either fly rapidly away or run beneath the leaves, and dropping to the ground, quickly make their escape. I found the best method of capturing them was by the careful manipulation of a small butterfly net.

Another small beetle that attacked the grape vines about the same time, was one of the flea-beetles, the *Haltica chalybea*. This beetle destroys the buds as well as the leaves of the vines. These beetles are also pretty active, although not so much so as the *Galeruca*. As their name indicates, they hop as well as fly, but I caught the majority of those I found in my garden without much difficulty. They, like the Cucumber Beetles, are very conspicuous in appearance, varying in color from a glossy blue of different shades to a green, and measuring nearly one-fifth of an inch.

The Codlin Moth, *Carpocapsa pomonella*, an unwelcome immigrant from the "Old Country," is a constant visitant. Numbers of the caterpillars may be captured by pinning a piece of old cloth around the trunks of the trees at a short distance from the ground early in the summer, and destroying the *larvæ* that have found shelter there day by day.

The Pear-tree Slug, the *larva* of one of the saw flies, *Selandria Cerasi*, is an occasional visitor, although I have not found them during the present season. They feed on the surface of the leaves of pear, cherry and plum trees, and thus, the lungs being destroyed, the trees ultimately perish, or at all events are unable to mature their fruit.

Last year, during my absence from home in August, the gaudy red-humped caterpillar, the *larva* of the *notodonta concinna*, defoliated a flourishing specimen of the Pomme Grise apple tree which I had received from our Association.

These are some, and a few only, of the garden pests against whose ravages fruit growers have continually to contend. There are many remedies suggested for the purpose of counteracting, or of modifying their attacks, of more or less efficiency, with which I need not occupy your time on this occasion.

Among the worst of these garden pests, however, is the *boy*, and as it is not permitted to poison him, as we poison Potato Beetles and Currant Worms, is one of the most difficult to guard against. Many persons are deterred from cultivating fruits, all from dread of his invasion; for it is not only the loss of fruit that is to be apprehended, but the wanton destruction inflicted by trampled beds and fractured branches. And as a frequent visitor, during the summer months, to the United States, I cannot help contrasting the absence of all such lawlessness and vandalism there with the state of things that subsist in Canada, and the contrast is very much in favor of the Republic. And this is one of many reasons why we ought to use our best exertions to encourage and assist this and other kindred societies, whether for the growth of fruit or the cultivation of flowers, for by so doing we may possibly in time induce all our neighbors to secure a home supply sufficient for the requirements of their families, so that we who incur the trouble and expense of introducing the best products of the garden or the orchard, with the view not merely of gratifying our own palates, but still more of developing the resources of the country and aiding in the progress of science—for science may be brought to bear even upon the management of orchards—and the cultivation of good taste, may not be rewarded by the wanton destruction of our property.

The meeting then proceeded to the consideration of the subject of "Pruning—Season and Method," which was introduced by the following paper from the President, who was requested by the meeting to allow it to be published in the CANADIAN HORTICULTURIST and the Annual Report:

PRUNING.

BY REV. R. BURNET, PRESIDENT.

The horticultural *Savant*, of Germantown, and others, have lately been ventilating the subject of pruning, and the *furor* seems to have reached us, as to-day it has the place of honor in our discussions. There are indeed few subjects more interesting, and fewer still upon which everybody imagines he can give accurate and practical information for the horticulturist. It is a matter of fact that almost everyone has tried the process; with varying success, it is true, still the trial has been made, and, in the case of many, the results heralded to the world. Strange it would be then if the President of your Association had nothing to say on this matter. I have thought that a few ideas and facts briefly stated might be an apt introduction to our present discussion, and thus give a direction and an impetus to our meeting which it might not otherwise exhibit. I do not flatter myself that I can advance anything new to those who are practical horticulturists, and have made pruning the subject of their thought and experiment for years. In the way of putting the matter, however, there may be something novel, which may afford the occasion of a practical recommendation from our Fruit Growers' Association to the producing world.

Pruning is an ancient art, and has been practiced in the far east from times immemorial. Scripture, too, has its scriptural illustrations from the practice, and asserts that every husbandman "purgeth" the tree, but more especially the vine. It strikes one as odd that a fruit tree requires all this care, while forest and other trees are allowed to develop much as nature dictates.

We have seen all sorts of fancies or conceits wrought by the knife, and trees under the process have been made to assume all sorts of comical and fantastic shapes. We confess that one touch of nature, to us, is of more worth and beauty than a thousand of those phantasies. An important question has always been, When is it best to accomplish this needful purgation? We have thought, and in fact have acted on the thought, that every variety of fruit tree requires almost a different season and method in the operation. Currants require one season, raspberries and strawberries a second, vines, peaches, pears and apples a third, and often the greatest confusion has arisen when speaking and writing of pruning when the variety under treatment has not been distinctly mentioned. Even the two varieties of currants, black and white, require different methods of treatment, though the season of such treatment is the same. A black currant requires as much as possible to be deprived of its old wood, and the encouragement of the young; a white currant needs to be switched like a thorn hedge, and the young wood left short and stubby.

Raspberries thrive under thinning and shortening of the canes after the dry and hot weather, in the end of June and beginning of July, has set in.

I trust I'll not be laughed at when I say that strawberries require as much pruning as almost any other cultivated variety of fruit. We have not seen Mr. Fuller's book on strawberry culture, and therefore cannot speak of his plans, but we can with confidence speak of the method adopted by Mr. Rykert, of St. Catharines, and in imitation of him, adopted by us in the cultivation of our strawberry patch. Successfully to cultivate strawberries, they must be grown in hills or stools, and their runners carefully pruned during the growing season two or three times a week. Plants for fruit ought to be treated after this method; for vines, they ought to be permitted to run at random. With strawberries well pruned, and mulched with clear straw or

cuttings from the lawn, the best results may be anticipated.

Mr. Hood, Fergus, in a recent issue of the *HORTICULTURIST* bitterly complains of the pruning of the grape vine. We esteem his views, and deem them pretty near the mark. Mr. W. Haskins, of Hamilton, once exhibited to the members of our Association, a demonstration of the benefits of allowing vines to run. He attached a bearer from the pole sustaining his vine to the chimney of his cottage, and trained the vine to this wire. The result was fabulous. Enormous crops of large branches of Rogers No. 15 were the consequence. The shy and sparse bearer on the shortening method produced most prolifically when allowed scope and healthy development. To any one who has had the misfortune to prune a vine late in the spring when the sap has begun to flow, it will be a matter of little wonder to hear that a small vine allowed to run can supply sap sufficient to support an immensely long branch or branches, and afford ample nutriment to a large yield. In pruning vines I invariably remove the leading *eye* of the laterals, in this way encouraging the development of the main stem, and only the smallest amount of leaf. The advantages of this treatment are not few. The wood ripens very much with the pruning process, and there is the encouragement given for the perfect development of the future fruit bud. All the summer we consider the best season for pruning the grape vine.

The pruning of the peach requires a deal of consideration. As a rule the peach is a rampant grower, *i. e.* it puts forth in the season a large amount of small tender shoots, we might with truth say, a profusion of such shoots. Two-thirds at least of these shoots should be removed by the knife in early spring. This process diminishes the amount of fruit buds, and leaves enough for the tree to perfect. For want of this precaution, we have seen very beautiful peach orchards have the fruit almost completely destroyed, or rendered worthless. The trees are allowed to grow their branches so thick and close that even where there is abundance of fruit it prematurely rots, and thus the hopes of the husbandman are crushed.

Pear trees, but not every variety, are the better of close pruning. In the case of the Belle Angevine, we have so short-pruned the branches, that in the course of a few years the whole tree was one mass of fruit spurs, and after a time the tree almost ceased to run to wood, its whole effort apparently being to supply the fruit stems. And so of many other varieties, notably the Flemish Beauty, Duchess d'Angouleme and Belle Lucrative. We have always pruned in spring when carrying on our fruit growing operations; in the fall when experimenting on the best season for the operation. In our climate, winter pruning requires to be done over again, to remove the *winter-kill* at the point of excision. The Beurre d'Amanlis, both the plain and the Panache variety, require their branches to run like long arms, and then the tree will develop long strings of beautiful fruit, and so of some few other varieties. Beurre Diel, White and Gray Doyenne, do well under the shortening process. In treating my pear trees, I always largely summer-prune. I found, I think, the profit of this process in the fruitful result. I am persuaded that the summer-pruned branch developed fruit buds, in some instances, several seasons before they otherwise would on the *laissez faire* system.

Spring is the best season for short-pruning the pear, and summer-pruning after the middle of July is almost a necessity. Care should be exercised not to summer-prune until the spring growths have attained their limit.

Apple pruning is perhaps more important than the pruning of any other fruit tree. It assumes importance from the comparative value of the product. The apple crop of Ontario is incalculably valuable. The right prosecution, therefore, of any process to increase that value and profit is urgently demanded from us as fruit growers. There is first the early pruning necessary for giving a right direction to the tree. Errors here and there are just like the errors arising from uneducated youth. As the branch is inclined so is the tree. Three or four branches, at the most, are enough to leave on the main stem in the early youthhood of the tree. After the first and second year of growth, all future pruning ought to be directed to the proper training of

these early leaders, to secure the highest production from the tree. A husbandman, in the cultivation of an apple tree, should do very much as the judicious medical man, assist nature with his remedies and nostrums. The cultivator has only to assist, not thwart the tree. This is best done by thoughtful removal of redundant branches in summer. What murderous and wasteful pruning we have seen in some apple orchards; treatment, we are bold to affirm, from which the trees will never recover. From early neglect too many leading stems have been allowed. When these are in the way, a wholesale removal with the rough edge of a saw little adapted for the purpose, is had recourse to. Nature vindicates her laws. Blackened matter, after the manner of mourners, surrounds the wound, which itself proves to be the parent of internal rot, eventually destroying the tree. Very few varieties of apple trees require much pruning after the early stages of growth. In fact, to prune full grown trees is exceedingly detrimental. Wherever the saw or chisel has been employed, a multitude of young branches will arise, to the detriment of the tree and of the fruit grower.

In the spring I visited a fruit producer and found him, saw in hand, in his orchard, near the top of an apple tree, which he was most mercilessly thinning out, and putting a rod in pickle for future use to his own back, untaught by the lessons around him outspoken by the various trees which he had formerly mauled. A great reformation is needful in the indoctrination of a better course of pruning. This is to be done by attention being paid to the different treatment different varieties of fruit trees require. To prune apple trees as you prune vines, and vines as you prune apple trees is suicidal. Even pears and apples require different treatment, although so closely allied. Doubtless the discussion of this subject now to be considered, will throw much light on the practice of our horticulturists, and afford the fruit growers of Peterborough the opportunity of contrasting their method and season with those of their brethren further west.

Thanking the members present for their kind attention, and trusting that this effort to suitably introduce the discussion of to-day may meet with that candid, but sharp criticism, which alone can adequately elucidate any subject, I remain, now as ever, their willing servant.

After the reading, the President called upon the members in rotation to express their views on the subject.

A. C. Dunlop, of Peterboro', said that he prunes his apple trees in the spring, believing that to be the best time. His grape vines he prunes in the fall, and in the summer pinches them in, leaving one bunch on each spur.

W. Jackson, Peterboro', prunes apples, pears and plums in June and July. Plum trees do not seem to require much pruning, and have been very successful in growing them.

John Croil, of Aultsville, prefers to prune apple trees in the middle of June, for then the wounds made by pruning heal up quickly. When necessary to make large wounds applies a thick paint to the cut surface to protect it from the sun and rain. With most persons, early in March is a convenient time to prune, and when pruning is properly and regularly performed, it can be done then as well as at any time. We prune grape vines in the fall, so as to be able to protect them during the winter, and in summer pinch back the shoots, leaving one bunch of grapes on each branch.

P. C. Dempsey, Albury, said pruning needs to be varied according to the object in view. The apple can be trained in very ornamental forms, such as cordons and espaliers, and pruning must be very different when directed to the forming of an espalier or the training of a cordon from that used in forming an orchard tree. When pruning is done to induce a particular growth, it should be performed just as the buds are swelling. When the tree is making too much wood, and we wish to check its exuberance, we prune in mid-summer, thereby removing a portion of the foliage, and inducing the formation of fruit buds. Thinks he has succeeded best with pears when he has let them alone. Those pear trees that he had pruned most carefully had suffered

the most from blight. Grape vines should be pruned in the fall, for we must lay them down and cover them with earth to protect them from the severity of the winter, for we have very little snow, and the frost penetrates to the depth of from three to four feet. We prune in the fall to lessen the amount of wood to be covered, and in the summer pinch in the shoots to keep the vine within bounds. Strawberry vines he prunes with the plow, by running a plow with a sharp coulter, after the fruit is all gathered, near the rows; run about two inches deep and cut off all the runners, then run the harrow over to level the earth back and pull out the runners. In this way the vines may be kept in a narrow strip, and yet allowed to renew themselves, so as to keep the same bed for several years. Prune raspberries by cutting out the old canes, and with the cultivator keep down the suckers.

F. Edwards, Peterboro', prunes his apple trees in the spring, and grape vines in the fall. Pear trees do not yield him any fruit; this year they blossomed well, but all the fruit fell off. Has not been able by any method of pruning to save his gooseberries; most of them mildew very badly.

A. E. Hayter, Millbrook, said that he had between thirty and forty grape vines; that he let them run over the ground as they would, without any pruning at all. In this way he had succeeded in raising good crops of grapes, and well ripened, while those trained on trellises were cut off by the autumnal frosts. He kept the surface of the ground clean, and sprinkled it liberally with ashes.

Chas. Arnold, Paris, used to prune his currants to a single stem, but now he does not prune them any more than to take off what cuttings he wants. In pruning his apple trees he adapts his method to the habit of growth of the variety. The Spy naturally grows like the Lombardy Poplar tree, and needs to be opened out. The Greening, on the other hand, is naturally spreading, and requires pruning in a different way. Considers June and July the best time for pruning, and November and February the worst. The wounded surfaces, if exposed to the severe cold of our winters, cause the tree to suffer. If large branches must be removed would certainly take them off in June, when they will heal over quickly. But very little pruning is needed for plum, cherry or peach trees. Black raspberries should have their canes pinched in, else the fruit will be small. Rogers' grapes should not be severely pruned, they are naturally rampant growers, and should be allowed considerable space. Would prune grape vines in November. He prunes his strawberry vines much after the manner described by Mr. Dempsey, not relying upon the old stool only, but adding to it some young vines.

James Stephenson, Peterboro', treats all his grape vines alike: pruning to two leaders, growing them on a trellis, and in the fall laying them down and covering them with Cedar boughs or with earth.

P. E. Bucke, Ottawa, said some prune their grape vines so as to make them leggy; they should be shortened back sufficiently to keep the whole trellis well covered with fruit and foliage, and not at the extremities only. The Houghton Gooseberry if not pruned will yield only small berries, and the tips of the branches that touch the ground will root. The bushes should be kept well pruned up and free from suckers, this will enable one to combat the Saw Fly to better advantage. Finds that if the bushes are thoroughly sprinkled with water in which a little paris green has been stirred, say a teaspoonful to a pail of water, at the time when they are in blossom, the Saw Flies will not make their appearance again during the season. When the currants are nearly grown he prunes out the suckers and cuts back the young wood. His grape vines he prunes in the fall, so as to lay them down and cover them with earth; prefers earth to Cedar boughs. In summer he pinches in the growing shoots. He grows some of the Rogers varieties, the Creveling does well, the Clinton is the most hardy sort.

A. M. Smith, Drummondville, prunes raspberry plants by removing the old canes and pinching back the young canes when they are about two and a half feet high. The Clarke Raspberry is too soft a berry to ship any distance, but it bears well, and sells well in a near

market.

Thos. Beall, Lindsay, thinks that June and July are the best months in which to prune apple trees, just after they have made their spring growth. He prunes his grape vines in the fall, to two eyes, and covers them with corn stalks, after washing them with tobacco water in which he has mixed some lime and a little *nux vomica* to keep the mice from gnawing them. Last fall he left his Clinton vine, which had never borne any fruit, upon the trellis without pruning, this spring he pruned it, and now it is loaded with fruit. He finds that the Delaware does not bear severe pruning. In the summer he pinches back the shoots, leaving two leaves beyond the fruit cluster, and when they again start to grow he pinches the new shoots back to one leaf beyond the previous pinching.

W. Saunders, London, prunes his apple and pear trees in the month of March, before the spring work begins. He washes the trunks of his trees with soft soap, or with a solution of washing soda, about the middle of June. He prunes his grape vines on the renewal system.

S. T. Carver, Peterboro', prunes his apple trees early in the spring, also scrapes the bodies and washes with soap suds.

W. Roy, Owen Sound, prunes in June and July; pares any wounds made by the saw with a sharp knife, and when the wound is dry paints it with linseed oil. He prunes pear trees but very little. The grape vines he lays down on the ground in the fall, and they are protected by the snow.

James Wallis, Peterboro', said pear trees generally do not do well here, those that go unpruned do the best. Plum trees need but very little pruning.

The meeting now proceeded to the subject of

TRANSPLANTING SEASON.

Fitzgerald, Peterboro', prefers spring planting, and mulching with strawy manure. Makes the soil fine and tramps it firmly about the roots.

Edwards, Peterboro', also prefers the spring, though he had never tried fall planting. He plants with care, and seldom loses a tree.

W. Jackson, Peterboro, said that as his soil was damp he planted shallow, and did not tramp the soil about the roots. Some Maple trees that he transplanted died he believed in consequence of the tramping of the soil about the roots, for some of them that did not get tramped lived. It is important that the soil be got in good order, and the roots spread out with care. Prefers the spring.

S. T. Carver, Peterboro': I never lost a tree in planting; set them the same depth as they grew before, make the soil very fine and settle it about the roots with water, then mulch and stake each tree. I plant only in the spring.

Thos. Allum, Peterboro', tried fall planting but the trees did not do well; spring planting succeeds well. Shortens in the head when planting.

Judge Macpherson, Owen Sound, plants in the spring, and finds from experience that this is the best time.

P. E. Bucke, Ottawa, thought that the failure in transplanting would be very much less if the trees were prepared for it in the nursery by frequent removals. The purchaser could well afford to pay a higher price for trees that had been thus prepared before being sold, for they would rarely fail to grow.

Chas. Arnold, Paris, would indorse what Mr. Bucke had said on the preparation of trees for their final removal by frequent transplanting in the nursery. The misfortune is that in this country such trees will not sell. It makes them less thrifty in appearance than those that have not been moved, and buyers infer that they are not healthy, and purchase in preference those that in consequence of not having been moved have grown more rapidly and look more thrifty. In England trees rise in price in proportion to the number of times they have been transplanted in the nursery. Spring is the preferable time, and in light porous soils the earth should be tramped firmly about the roots.

W. Roy, Owen Sound, finds that Hemlocks need frequent transplantings when small. In heavy soil he would not tramp the earth about the roots. Plants apple trees thirty feet apart each way.

W. Saunders, London, said that some recommended planting strawberry plants in the fall, but he had found that to be successful it must be done quite early, so that they will become well established before severe weather, else they are very liable to be winter-killed.

A. M. Smith, Drummondville, had been very successful in transplanting canes of the red raspberries in the fall, but could not advise planting strawberries then.

A. E. Hayter, Millbrook, prefers spring planting for most things, though raspberry and gooseberry plants start so early in the spring that he prefers to plant them in the fall.

Dumble, Peterborough: In hard cold soils would plant the trees on the surface, without digging any hole, and cover the roots sufficiently with good mellow earth. There is a difficulty in obtaining trees hardy enough to endure our climate.

Thos. Beall, Lindsay: Don't dig a hole at all in planting trees, but prepare the ground the year before by deep subsoiling and frequent ploughing; leave a furrow where you intend to have the row of trees, then set the trees in the furrow, cover the roots with earth, and then throw the soil back to the trees with the plow. Spring is the more favorable time for

transplanting in this climate. Strawberries can be successfully transplanted in the latter part of August if the weather be rainy.

J. McD. Allan, Goderich, prefers fall planting; has planted four hundred trees in the fall and did not lose a tree, and what was more, by being in the ground ready to grow on the first appearance of spring, they have gained almost a year in growth.

To be Continued.

The Canadian Horticulturist.

VOL. II.]

OCTOBER, 1879.

[NO. 10.

THE SUMMER MEETING.

Discussion on "Transplanting Season" continued.

P. C. Dempsey, Albury, thinks that the locality has much to do in deciding at what season to plant. In cold latitudes trees brought from a more southern climate and planted in the fall suffer much from the severity of the winter, and often perish. The soil also has much to do with the matter. In light soils would tramp the earth firmly about the roots.

Rev. V. Clementi, Peterborough: I fail in fall planting, but succeed in the spring.

Henry Robertson, Collingwood, believes that fall planting is the best in his section, at least those trees which he had planted in the fall did well, while those planted in the spring largely failed.

P. C. Dempsey, Albury, would plant sorts that were at all tender on ground that sloped to the north.

J. McD. Allan, Goderich, stated that in Maine the orchards were planted mostly on the northern slopes; and that peach trees in his section did best on the north side of a fence, on the south side they soon died.

Chas. Arnold, Paris, grows peaches best on northern slopes.

D. W. Beadle, St. Catharines, had noticed that peach trees on the south side of buildings frequently lost their fruit, while the same variety on the north side would bear a good crop.

P. E. Bucke, Ottawa, stated that he had planted some filberts, part on the north side of the fence and part on the south side; those on the south side were killed back every winter, but those on the north side were not injured.

The fruit committee presented their report on the fruits on exhibition, in which they say that the Ontario Black Raspberry is a very fine berry, fully as large as the Mammoth Cluster, and a few days earlier.

THE BEST TWENTY VARIETIES OF APPLE FOR ONTARIO.

At the Winter Meeting of the Fruit Growers' Association the members present gave a list of twenty varieties of apple which each thought from his own standpoint of knowledge and observation to be the best for cultivation in Ontario. As was to be expected, individual tastes and preferences made some variation in the list, even among those who resided in the same county, but when comparison is instituted between the lists given in by those who reside in the colder parts of the Province and the lists of those whose homes are in the old Niagara District, then the great diversity becomes apparent. The truth is, that the diversity of climate in Ontario is so great that it is quite impossible to give a list of varieties that will be the best to grow in all parts of the Province. Regard must be had to the climatic conditions of the several parts of the country, and those kinds selected which the test of experience has shewn to be suited to the climate, or which from their known endurance in other places of similar climate, may be expected to do well.

Neglect of these considerations has led to a great deal of disappointment. Some who read the lists given in by men of long experience in fruit growing at once conclude that these are the varieties for them to plant, forgetting the great difference there may be between the climate in their own sections and that which prevails where these fruit growers reside. Tree agents also, from want of consideration of these differences of temperature, have often advised the planting of varieties by those who purchased from them that were wholly unsuited to the locality, forgetting or not knowing that varieties which were highly profitable where they lived would not thrive where their customers lived.

One of the objects in view in drawing attention to this subject at this time is to impress upon our readers the importance of carefully reflecting upon the particular circumstances of location, exposure and climate by which they are surrounded, and applying their own judgment to the selection of the varieties of apple and other fruits that will be likely to succeed, and not too hastily to conclude that the varieties which some distinguished pomologist recommends, or which some tree agent praises, are therefore the sorts for them to plant. Think on these matters for yourselves, make yourselves acquainted with the varieties your near neighbors have grown and with what results, read what is said about them by others who live in similar surroundings, and then you will be prepared to plant intelligently.

One thing more, twenty varieties of apples are not wanted by any one who is growing fruit for profit. The planting of a great many varieties is a very common error, but the wise man will confine his plantation to a few sorts. One variety of early ripening apples for summer use is quite sufficient, another to follow, and so arranged as to keep up a succession through the autumn, winter and spring is all that is wanted, and if one is planting for market a multiplicity of kinds is only a nuisance. In the climate of that part of Ontario where the peach will thrive, the following varieties will give a continued succession, namely: Early Harvest, Sweet Bough, Duchess of Oldenburg, Gravenstein, Blenheim Orange, Fameuse, Ribston Pippin, R. I. Greening, E. Spitzenburgh, Talman Sweet, Swayzie Pomme Grise and Roxbury Russet. This list might not suit the preferences of many, who can alter it to their liking, but is given to shew that about a dozen varieties is all that is needed to keep one's table well supplied with this fruit throughout its season; and they will, if judiciously selected, give far more satisfaction than any orchard of even twenty sorts, to say nothing of orchards embracing the entire catalogue.

SMOKING OUT THE CURCULIO.

In some of the discussions at meetings of the Fruit Growers' Association mention has been made of this method of getting rid of the depredations of this troublesome insect, and thereby securing a crop of plums. In the July number of *Moore's Rural Life*, a new and very beautiful as well as instructive monthly, devoted to suburban, village and country homes, published at 34 Park Row, New York, for only \$1.50 a year, we find the experience of Dr. Kuffman, of Iowa City, with this method. In the season of 1874 he put about a quart of coal-tar, procured from the gas works, into a long-handled stew-pan, which he ignited with the help of a few shavings. Carrying this under his plum trees he filled every part of the tree with the dense smoke, which evidently had the effect of causing every insect, even worms and spiders, to leave the trees. This smoking operation he repeated three or four times a week, and if rain washed off the smudge, he immediately smoked the trees again. He continued this proceeding until near the ripening of the fruit, and as the result, harvested over thirty bushels of plums from forty-two trees. In the season of 1875 the plum crop was an entire failure, but in 1876 there was a good yield, and he again had recourse to the smoking with the satisfactory result of not being able to find the mark of a Curculio on any of his plums, except in trees which he had intentionally left without smoking. The fruit on these trees, with the exception of one variety, was all stung by the Curculio, and fell off. We wish the Doctor had told us what variety of plum that was which the Curculio did not sting, for if not stung under such circumstances there is reason to believe that there is one variety which is Curculio proof, and it might be worth while to plant that extensively as a market plum.

THE EFFECT OF DIFFERENT COLORS UPON LIFE.

We all know that the light which comes to us from the sun is compounded of all the colors of the rainbow, that all these colors blended together make the pure light—the light of day.

Experiments have been made to ascertain what is the effect of each of these colors upon both animal and vegetable life. The theory was started some time ago that plants would thrive best in blue light, and that grapes especially, growing in our hot houses, were benefitted by glazing the houses with blue glass, the health and vigor of the vines being greatly improved, and as a consequence their productiveness. These experiments were undertaken in order to test this theory, and see if the different rays of the spectrum had any beneficial effect upon life, and in what degree.

The *Journal of Science*, published in Toledo, Ohio, an excellent periodical of practical information, says that the result of these investigations seems to shew that animals live longest in the green and red lights, that violet light favors development to a great degree, blue light next, and then yellow light. Plants from which the red light was withheld were no longer able to increase in weight, but took to consuming their own substance, and gradually died. The conclusion seems to be that no one color is sufficient for the best welfare and growth of plants, but that each ray of the spectrum plays its own particular part in the economy of life, and that all the rays are necessary to perfect health and full development.

Thus it is that the investigations of science only reveal the matchless wisdom of the Creator, and shew that He has provided for every necessity of life just that which will best supply the need.

RECOLLECTIONS OF A RECENT JOURNEY SOUTH.

BY WM. SAUNDERS, LONDON, ONT.

(Continued from page 112.)

On rising from our sleeping berths on the morning of the 30th of November we found ourselves nearing Brunswick, a quiet town at the southern extremity of Georgia. This night journey had brought us to a point where the character of the vegetation had greatly changed. A dwarf-growing palm, known as the Saw Palmetto, *Sabal serrulata*, had replaced the common weeds and ferns of the day previous, and gave quite a new and tropical character to the landscape, while many of the trees began to be festooned with that beautiful plant known as Florida Moss, *Tillandsia usneoides*, a characteristic southern plant belonging to the Pine Apple family, but so closely resembling a long drooping moss as to have received everywhere the name of "Long Moss" or "Florida Moss." It is an epiphyte or air plant, which attaches itself to the bark of the trees by a slender filament, from which it grows long in luxuriant hanging tufts sometimes a yard or more in length, drawing its nourishment from the surrounding atmosphere. The forests are composed almost entirely of the large leaved Yellow Pine, *Pinus australis*, valuable for the production of turpentine and rosin, and also the source of the great lumber supply of this district.

We arrived in Brunswick in time to take the boat on the inland route for Florida at 7 a.m. We were soon pursuing a tortuous course among the low lands, covered with reeds and rushes, backed by higher islands. Passing Jackel's Island, we get a glimpse of the open ocean, which was soon again hidden from view by the larger Cumberland Island, which is twenty miles long, and a famous hunting ground, where deer are plentiful and wild fowl abound. It is wooded chiefly with pine. The day was warm, but the sea breeze and the novel scenery about us made it most enjoyable. There were thousands and tens of thousands of ducks flying about in flocks over the sea marshes; grey and white cranes, turkey buzzards, and many other birds, helped to enliven the air, while numerous porpoises sported in the waters about us, and untold thousands of bushels of oysters were everywhere cropping up in huge heaps and lining the bottoms and margins of the shoals. We reached Fernandina, Florida, about noon.

Fernandina is an old but rather quiet town, built on an island just off the main land, called Amelia Island, and has one of the best and safest harbors on the Atlantic coast. During the war of 1812, when the town was Spanish and neutral, more than three hundred square-rigged vessels were congregated in its capacious harbor at one time. It was founded by the Spaniards in the early history of America, and has witnessed many scenes of strife and bloodshed. Here the first orange trees were seen with oranges on them, also bananas fruiting in the open air. The banana is so associated in one's mind with large conservatories with their elegant and refined surroundings, that it seemed quite incongruous to see a handsome banana tree overshadowing a dirty negro cabin. Roses were in bloom, and quite plentiful, gigantic aloes, such as I had never seen before, flourished in the gardens, oleanders as large as good sized apple trees just coming into flower, and large Palmetto trees, *Sabal adansonii*, from twenty to thirty feet high, were very handsome features in the landscape.

After a comfortable dinner at the hotel, where we enjoyed our first feast of fresh Florida

oranges, we left by train for Jacksonville, arriving there early in the evening. Away from the coast line and rivers the country is very flat and uninteresting. The soil is usually damp, and covered with Yellow Pine and Scrub Palmetto, mixed with various sorts of grasses. Jacksonville, named after General Andrew Jackson, is the largest city on the Atlantic coast south of Savannah, and contains about thirteen thousand inhabitants. It is situated on the St. John's River, twenty-five miles from its mouth. An extensive lumber business is transacted here, and vessels may be seen at all times at the wharves loading for distant ports. Heavy shipments of oranges are also made from this port during the winter months. Looking out of my bedroom window next morning the first thing seen was a large wild orange tree on the street laden with its golden fruit; on a line with it were several fine specimens of the Eucalyptus tree, *Eucalyptus globulus*, while on the opposite side of the street there was a splendid row of live oaks, *Quercus virens*, an evergreen oak of free growth, with beautiful glossy foliage. These gaily decorated with Florida Moss, were succeeded by good specimens of the Chinaberry tree, leafless at this season, but laden with their showy clusters of buff colored berries; while beyond all, forming a background to this scene, flowed the St. John's River, which is here nearly two miles wide. During an early walk I passed some beautiful gardens, where the rose, the jasmine, and the brilliant colored poinsetta, and many other floral beauties, vied with each other in brilliancy and fragrance, and made it very difficult to believe that this was really a December day. There is, however, an entire absence of fine grassy lawns, which lend such a charm to homes further north; the climate is too hot in summer for the fine grasses and clover to endure, hence any attempts in this direction are with coarser species of native grasses, which lack the softness and beauty of the finer grasses we are accustomed to see. While the climate in winter is so very suitable for flower growing, the soil is very poor in many places, almost pure white sand, so that it becomes a matter of surprise that plants, flowers and fruit succeed at all. After spending a quiet but very pleasant Sunday in Jacksonville, we paid a visit by boat on Monday morning to one of the neighboring orange groves on the St. John's, where we enjoyed the sight and taste of this luscious fruit, and spent a very pleasant hour or two in wandering among the orange, lemon and lime groves, and enjoying the fragrance of beautiful roses and other flowers growing in profusion.

TRANSPLANTING.

BY P. E. BUCKE, OTTAWA, ONT.

With regard to transplanting trees, there are hardly any, from the currant and gooseberry to the large forest tree, that are not greatly benefitted by being taken out of the ground, the roots pruned and re-set one or two years before they leave the nursery. If this method was more generally adopted by our nurserymen there would be fewer failures when trees were permanently planted. The planter would also find that the trees would not receive so great a check in its growth, and would come to bearing maturity a year or two earlier. Any one who understood what he was about would gladly give an advance price for such trees, as the roots would be more fibrous.

Any nurseryman who would adopt this plan with a portion of his stock, and advertise the difference in the cost of trees so transplanted and those not so treated, would add a valuable feature to his catalogue. It is obvious that the reason why trees make so little growth the first year after they have been set, is not so much the removal as the loss of their feeding roots, which have to be replaced before the tree can make a start to grow again; and there is no reason why this check should not take place before the intending planter procures the trees as well as afterwards. It is well known that Evergreens are moved twice and mostly three times, and there is no reason why deciduous trees should not be similarly treated. Young orchards or shade trees will resist almost any drought, especially if mulched; and thus by setting trees sure to grow, time, labor and money may be saved with a little forethought and precaution. Everyone knows the reason why young trees are more successfully moved than old ones is because they have proportionately more fibrous roots left attached to them after they are taken up.

Those who have lived in a town where there is a taste for decorating the streets with forest shade trees, can scarcely help having noticed the number that die and have to be replaced. As a rule this misfortune is caused by getting trees direct from the woods and setting them along the streets without any previous root-pruning or any other preparation. The wonder is that so many grow—that they do not all die. I have tried several experiments in this branch of forestry, and have been so successful that perhaps my personal experience may not be uninteresting. Several years ago, whilst discussing the matter of growing trees with a friend one autumn day, as we were passing through a sugar bush, he said: "I would advise your trying to grow some of these seedling maples, they will take little room, and I think you will find it a success." So as we walked along together we pulled up with our hands seventy-five little fellows a foot or eight inches high. These I carried home, and having pruned the roots, planted them in a trench thirty-five feet long, where they stood a couple of years, at which time I had a nice lot of young trees four feet high. These I dug up in the spring, thoroughly root-pruned, removing all top roots, and planted round the inside of my garden fence. Two years more gave me nice thrifty saplings as thick as my thumb and eight feet high. Of course during this time I pruned off all side shoots, and I found that even those that were crooked soon grew as straight as a rush. This spring I set out along the roadside as pretty a lot of clean looking young trees as I ever saw. The year previous to getting the Maples, I obtained some nuts of the Butternut; these I planted, and have also transplanted a couple of times, and many are now ten and twelve feet high; these are set intermediate with the Maples, and make a most desirable looking lot of shade trees, and leafed out as if they had never been moved.

There, is however, this objection to the Butternut: it puts out its leaves late in the spring,

and drops them early in autumn. But the nuts are valuable when young as a pickle, and when older, boys, and some men, like them to eat. The leaf is very feathery, and has a graceful appearance not unlike the Palm. Further west and south I would recommend the Sweet Chestnut; its leaves resemble the Beech, but are of a darker green, and more glossy, and the nut has a certain market value.

REPORT ON MR. MOYER'S SEEDLING PEACH.

BY ROBERT BURNET, LONDON, ONT.

For three years past we have been annually favored with the receipt of samples of the "Early Canada," a seedling peach raised by Mr. Allen Moyer, of Jordan Station, G. W. R. of Canada.

Two years ago the fruit was fully ripe on the first of August, this season they are a little later. The "Early Canada" is a taking fruit, bright in color, slashed with pink, and of a fair size. Its quality is first rate, flavor delicious, and an almost perfect free stone. In this last respect the "Early Canada" is fairly ahead of all other early peaches. It is more free at the pit than the "Alexander," the earliest of the early ones. It is earlier than either "Amsden's June" or "Honeywell," and this is saying a deal in favor of the "Early Canada."

We are satisfied that the "Early Canada" will take a foremost place among early peaches. Mr. Moyer is to be complimented on his perseverance and success in at last having introduced one of the best early peaches known.

When we add that Mr. Moyer is one of our most talented, devoted and practical workers in our Fruit Growers' Association of Ontario, we only express the unanimous desire of every member of our Association, that a full reward may crown his laudable endeavors to benefit fruit growers.

TOMATOES.

BY A. HOOD, BARRIE, ONT.

It is part of our nature to set little value on that which is easily obtained, and to prize highly some things otherwise valueless because they are scarce. Else why should old coins and old pictures be sold for such fancy prices when the new are so much more beautiful and therefore more valuable? I say more valuable, because my standard of value in a picture consists in the power it possesses of affording pleasure to those who look at it, and not in that false worship that is accorded to the productions of the old masters because of their age, or their something, that nobody can see but the initiated. No, our modern painting is worth a dozen of them.

But what has all this to do with Tomatoes? Simply this, that most of the readers of this journal live in favored localities, where they can have them for nearly three months in the year without even the trouble of sowing the seed, and naturally they value them less because so easily obtained; while here, and in every other locality where it has been the writer's fortune to reside, it is only by particular care and a great deal of nursing that we are able to obtain the ripe fruit in anything like seasonable time, and we value them accordingly. We start them in the house, nurse them in the hot-bed, protect them from June frosts on the open ground, and if after all our trouble we are able to make use of the ripe fruit for six weeks in the year (very frequently it is only three) we consider ourselves very fortunate and amply repaid for our trouble.

It is said that a mother loves most that child that has given her the most trouble and anxiety, and it may be that I, like others, love tomatoes more than I should did they tax my time and attention less. But admitting my liability to a partiality of this kind, I still believe that they have an intrinsic value of their own, which those who are so fortunate as to possess them in abundance are for that very reason not so well able to appreciate.

But why all this preface about such a common fruit as the tomato? you will ask. Just so, but you see it is not common with me after all the trouble I have in growing it. But some, who have more than they want of it, can't understand that anything that *is* common may be at the same time valuable, or a proper subject for a long article, but I consider a fruit that is meat, drink and medicine, all in one, and is likely to prove more beneficial to the human race than a great many things that cost more money, is worthy of more enthusiasm than I am capable of arousing in its favor.

As a meat it is not, I admit, very substantial, but as a drink what can be more delightfully refreshing? As a medicine it aids digestion, acts on the liver and kidneys, counteracts the baneful effects of a malarious atmosphere, and possesses, though in a smaller degree, the virtues of calomel, without its injurious qualities; is a sovereign remedy for dyspepsia and indigestion, and has been used successfully for the cure of diarrhoea. I know nothing equal to it for creating an appetite; and as, at the same time, it aids in digesting the additional food it induces you to consume, as a matter of course it has a tendency to cover the bones with an extra coating of flesh. Its action too is not that of a temporary stimulant, it does not cease to give an appetite when you cease to make use of it, but if you continue this agreeable medicine while it is in season the benefit will last through the winter. As meat, as drink or as medicine, the idea is not conveyed that it has any merit as a dessert, but as its ardent admirer I should be doing it great injustice did I not place before the readers its claims in that respect, and demand for it a very high rank as an after-dinner relish, possessing a property that I can ascribe to no

other fruit, that permits you to eat of it to excess without injurious consequences, for as it acts as a gentle stimulant to the digestive organs, if the stomach be overloaded it soon passes off without any disagreeable effect, or creating any tendency to indigestion.

If you wish to enjoy this fruit in its greatest perfection eat it fresh off the vines. Take a sweet cake or soda biscuit in your hand, about an hour after dinner, and visit the tomato patch, select one that is not too ripe, and if the eating of that does not give you an appetite for another you have not got the right kind of tomatoes. I have only very recently discovered the right kind myself. Years ago we thought of nothing but the Large Red and the Large Yellow, but as earliness with me was always a desideratum, I cultivated the Early Red French, which I think must be identical with Hubbard's Curled Leaf, and have found it to be the very earliest kind I could procure, and I think it has that distinction still. Its flavor is good, very much superior to the Large Red, but it grows so wrinkled and uneven in shape that it is generally rejected for kitchen use, and it does not sell well. It is also very watery, having scarcely any pulp adhering to the skin; but with all its faults, it is so much superior in flavor to the Large Red, that while I enjoy eating it raw like a plum, I should never make use of the latter unless cooked.

This year I have had a surprise, and an agreeable one too. I have cultivated two kinds of tomatoes that I had never before tried, viz: the Trophy and Hathaway's Excelsior. These are of a more regular shape, have both a thicker pulp, and a thick fleshy lining adhering to the skin something like that of a musk-melon, which gives them that firmness which is called in the catalogues "very solid." The flavor of the Trophy is good, but that of the Excelsior is better; yes, superior beyond all expectation. It is as much superior to the common Large Red as a Lombard is superior to a wild plum. It is not so large or productive as the Trophy, nor have I found it any earlier. I obtained the seed of Jas. Vick, of Rochester, who describes it in his catalogue as "of excellent quality every way—the best tomato I have ever grown," and it quite justifies the description. This fruit is evidently improving, plums will have to get out of the way or it will catch up to them.

I dare say some of my readers will think that if tomatoes are good they are not deserving of all this eulogy. Well, judging by the same rules as other fruits, perhaps not, but they must take into consideration the comfort they feel after partaking of a liberal allowance; what a delightful sense of fulness and internal satisfaction they experience; and then how flattering it is to one's hopes of longevity to know that you are day by day adding a little flesh to your none-too-corpulent figure; to feel that your vest is getting too small, and that the waistband of your pants will certainly have to be loosened out. What a relish too you have for your food during the next six months. How glorious a thing it is to be able, like Macbeth, to say, "Throw physic to the dogs," and rejoice in the diminution of your doctor's bills. What a pity it is that we cannot have two crops in the year, so that our shadows might never grow less.

COAL OIL FOR THE CURCULIO.

One of our members, R. O'Hara, Chatham, writes that he placed an open basin of coal oil in one of his plum trees last spring. He now notices the fact that the fruit on all the trees except this one is destroyed by the Curculio. On this tree a few were injured in the middle of July, after he had removed the basin of oil.

Have any others tried this experiment? If they have will they please give their experience through the pages of the HORTICULTURIST.

A. M. PURDY'S EXPERIENCE WITH RASPBERRIES.

In the August number of the *Fruit Recorder*, the Editor gives his summer's experience with several kinds of raspberries, from which we learn that he finds the Davidson's Thornless (black) and Highland Hardy (red) to be the first to ripen, and that a good succession is kept up in the black raspberries by the Doolittle, Mammoth Cluster and Gregg. He speaks well of our favorite black, the Mammoth Cluster, of its size and productiveness, and he seems to go into ecstasies over the Gregg, which ripens its crop after the Mammoth Clusters are gone, claiming that it is the largest, most productive and best black raspberry grown.

After the Highland Hardy, he finds that the Turner is the next red raspberry to ripen, after that the Brandywine, which is so firm a berry that it bears shipping to a long distance, and on this account, combined with its bright color, productiveness, and hardness of its bush is a very valuable market fruit. We infer from his remarks that this variety requires a rich soil and high culture to produce the best results. The Philadelphia is put down as the most productive of all the red raspberries, and sells around home for about the same price as other reds. The Clarke and Herstine are considered fine for home market but too soft for shipping. Of the Pride of the Hudson, he says the plant mildews badly, the fruit large, soft and of poor flavor, not equal to the old Homet or the Delaware. The Henrietta he pronounces to be the same as the Amazon. Canargua is put down as a fruit of poor quality though a great cropper. The Carolina is described as a rich amber colored fruit, productive and hardy as a black cap. The Golden Thornless is praised for its productiveness and value for drying, but we cannot see of what use so poor and flavorless a fruit can be even where it is dried. The Thwack is mentioned as a very fine berry, and a little larger than the Brandywine, and a good cropper, with a promise of being very hardy.

THE CURRANT CROP.

BY B. GOTT, ARKONA.

Right glad are we that we planted the currant ground after all. For the last year or two we have been very despondent of reaping any fruit for our labor from this plantation, though quite extensive, on account of the disheartening prevalence of the Currant Worm, and of its determined and repeated devastation on the foliage of our currant bushes. But now we think the good hand of Divine Providence has even restrained this pest in our favor; and although it was present in some numbers, yet the evil has not been as severe as usual, nor the desolation destructive to the crop. The result is as handsome a crop of Red, White and Black Currants as it was ever our privilege and pleasure to possess; and they are coloring up so finely in their various hues as to tempt even the most fastidious palate.

As usual, too, in our fruit business this year the market is in tip-top tone, ready to grasp with out-stretched hands the beautiful specimens of rich, ripe fruit as they are offered in their season. This is at present a very encouraging feature of the fruit business in this country, and the realization of our fond hopes. Of the sorts we fail to see the great advantage of, are the large, high-bred European kinds, as compared with the old familiar sorts, Red and White Dutch; neither have we succeeded in reconciling the old dispute of either the identity or essential difference of the two claimants to popular favor Cherry and La Versailles. We do feel, however, that the advantages very strongly lie in the cultivation of the smaller varieties. Of these, for red, we much prefer the old Red Dutch and the Victoria, for white, we very highly esteem White Grape and old White Dutch, and for black, the preference should be at once given to Black Naples.

From these we firmly believe the maximum of satisfaction and of profit will be surely gathered if carefully managed and cultivated on suitable dry and strong clay loamy soils. Of the various uses of the currant in our domestic economy it is scarcely necessary for me to speak, considering the class of readers I am addressing. The farmers' wives and promising daughters of this country know full well the various uses of the delicious fruits they see growing around their family homes, and can, by their intelligent skill and ready ingenuity place them before their guests as temptingly as those of any other people. Served up as jellies or in pies, or with cream and sugar upon them, whole and uncooked, they are at once healthy, nutritious and pleasant taking.

DOCTOR REEDER PEAR NOT SUBJECT TO BLIGHT.

BY S. D. WILLARD, GENEVA, N. Y.

Noticing an article in the CANADIAN HORTICULTURIST regarding Dr. Reeder Pear, I want to say a word in its favor.

I have four trees in my orchard that two years ago withstood the blight,—when Clapp's Favorite and Beurre d'Anjou all around them were destroyed entirely—and to-day are loaded down with fruit. Although not to the nurseryman a desirable tree to grow, it certainly seems to me as one of the best, providing it sustains its character in these respects.

A VISIT TO MR. A. GAULD'S GARDEN, LONDON.

BY ROBERT BURNET, LONDON.

There is a common but true saying that "Far fowls have fair feathers." Men are often greatly concerned to know of the distant and the future, while the present and the near have no attractions for them. This is true of matters horticultural as well as of everyday occurrence. Few people who have not seen Mr. Gauld's grapes under glass would believe what an excellent show an amateur can make in the production of grapes. Though Mr. Gauld's residence is within five minutes walk of the centre of our busy city, yet he here displays his good taste in rural life in cultivating the choicest selection of Pomona's gifts. His grape house is forty-eight feet long by a corresponding breadth, and stocked with a dozen and a half of very fine varieties of indoor grapes. Some idea of Mr. Gauld's self-imposed labor may be gathered from the fact that he cares for, thins, prunes, and keeps in first-rate order sixty-two vines. A thrip was scarcely to be seen, and the whole surroundings were models of neatness.

Out of doors he can exhibit many of Rogers' varieties of grapes, and most of the established sorts generally held in good repute by horticulturists. His Burnet vines were making good progress, though they have been twice cut down by the frost this season. To give the new and valuable grape, the Pocklington, a fair chance, he had one under glass and another in the open air. The one in the open air was uncommonly like a Concord in appearance, and very different in habit from its fellow under glass. On making a comparison, however, of the foliage, the Pocklington was found better clothed and thicker in leaf than the Concord.

The trees and plants distributed by the Fruit Growers' Association of Ontario were on the whole doing well. The Flemish Beauty, Clapp's Favorite, Swayzie, Pomme Grise and Grime's Golden flourished greatly.

Mr. Gauld's cultivation is to be much admired. He believes in and acts on the principle of mulching, indeed he attends to the grand first principles of horticulture. Having a good manure heap, the very weeds being made to do duty in this respect.

We tasted some very fine Red Astrachan apples fully ripe, and found the trees loaded with luscious fruit. A White Smith Gooseberry growing in the tall grass was free from mildew, others in clean and cultivated borders were badly affected.

Mr. Gauld is one of our quietest but most efficient members of the Fruit Growers' Association, and while enthusiastic in the theory of fruit culture, is one of our most practical horticulturists. We may add also that he makes annually a fair show at the Western and Provincial exhibitions.

PARIS GREEN.

BY R. O'HARA, CHATHAM, ONT.

I feel it almost a duty to warn your readers against the use of Paris Green as an insecticide, recommended on page 35 of your March number, or at least to give them my experience in using this deadly poison.

Last summer I found a vigorous cherry tree which was rejoicing in its fifth summer, infested with caterpillars. I resolved to employ active means to exterminate them, and syringed the tree with a weak solution of the drug. To my great satisfaction I found the ground next morning strewn with the dead and dying. Alas! I killed the tree also. This spring it refused to put forth bud or blossom, and in the month of June it was as dry as a lime burner's hat.

The Canadian Horticulturist.

VOL. II.]

NOVEMBER, 1879.

[NO. 11.]

NOTES FROM CHATHAM.

BY R. O'HARA, CHATHAM.

In Kent County at this date, July 25th, 1879, the fruit growers have every reason to be satisfied with the general results of their labor. A June frost somewhat damaged the strawberry crop in the interior of the county, otherwise, all fruits except apples were in great abundance. This crop is thin, owing probably to the prodigious yield of last year. Grapes and peaches are in great profusion.

This is with me the fourth summer of the Salem Grape vine distributed by the Association, who with perhaps unintentional liberality sent me two specimens. For the reception of these interesting plants, I prepared, at the foundation of a verandah with a south-western exposure, two trenches six feet square and three feet deep; these I filled with fresh sods, bones, charcoal and ordinary garden soil. A space of twenty-nine feet by eight feet is now almost entirely covered with rank foliage, and with such a weight of fruit that I am tempted to cut part of it off. I lay down the vines every winter in the angle formed by the surface of the plot and the base of the verandah, covering with an ordinary board. I am satisfied that in every part of Canada this extra trouble is well repaid, and in this latitude we are satisfied that every vine twig so treated in the autumn will be alive in the spring.

The Downing Gooseberry has succeeded famously. The bush bears well. The fruit, a light greenish white, being of the size of a musket ball. The flavor, however, in the opinion of most people being decidedly inferior to that of the Houghton Seedling. The former shows a trace of mildew here and there, the latter never.

The Glass' Seedling Plum is still growing with the rapidity peculiar to this fruit tree under favorable circumstances. I may add that all my operations in gardening are in a rich clay soil, disintegrated with ashes or stable yard manure. Ten other plum trees I have which each exhibited about a peck of plums early in June of this year, and which were of course at the mercy of the Curculio unhindered. I contrived a plan by which the atmosphere was rendered disagreeable. In the centre of one of the trees I placed an earthenware dish full of coal oil, which gave the impression that an oil refinery was in the immediate vicinity. Of the fruit of this tree I lost about ten plums, four or five of which only bore the characteristic mark of the Turk. Three-fourths of the fruit of the remaining trees was destroyed by his ravages. I seek not to establish any relation between a cause and an effect, merely mentioning a fact to which many persons can bear testimony, in the hope that the subject may be more fully investigated, and the value of coal oil as an ally in horticulture be more thoroughly tested.

The Clapp's Favorite pear tree was all that could be desired. In this instance also the Association sent me two specimens. Both attained a height of ten feet and then succumbed to the dread fire-blight. The raspberry never grew. The strawberry distributed by the Association, which I took to be Arnold's Seedling, succeeds admirably in clay ground. The fruit, which is liberally displayed, attains a great size. In appearance, a cross between the Triomphe and Col. Cheney. The flavor, however, is certainly not equal to that of the Triomphe, than which no better strawberry, in my opinion, can be planted in rich clay soil. The other plants distributed I did not get.

THE FIG AGAIN.

BY G. F. NEEDHAM, WASHINGTON, D. C.

Had friend Bucke acquired experience in laying down the fig tree as per instructions in my paper, his fears that they are too tender and brittle would be “like the baseless fabric of a vision.”

However, I am glad that he has called the attention of your readers to this delicious fruit, and I hope that the matter will be kept before the people until all shall hear the good news, that they can grow the fig in your delightful climate as well as they can at the south, and with far greater success than they can in England. Speaking of England, by the way, a correspondent has just sent me a leaf from the original tree brought to England eight hundred years ago, by Thomas à Becket, and from which he says he has eaten fruit each year for many years past.

I will be pleased to send my paper “*Fig Culture at the North a Success*” to any address, (the party enclosing a postage stamp) though perhaps the full publication of the practical part of it in the July number, will obviate the necessity of your readers ordering it.

We have received the following article from B. Gott, Arkona, in response to our request that he would give the readers of the *CANADIAN HORTICULTURIST* the benefit of his experience in growing peaches for market, and we are sure our readers will join us in thanking him for his kind and ready response.

PEACHES MOST PROFITABLE FOR MARKET IN OUR CLIMATE.

BY B. GOTT, ARKONA.

By the term “our climate,” I mean those conditions of atmosphere and earthly surroundings common to a large part of western Ontario. By the word “market,” we understand any market in this country that is the readiest attainable. This western Ontario is a hard region in which to think of growing tender and luscious peaches, and will in no respect compare for this purpose with the congenial and far-famed Atlantic sea-board, where early peaches of the finest character are so largely grown. Yet by some unexplainable and mysterious Providence over us, peaches are grown—and, moreover, are grown in large quantities—and to our utter astonishment they are not so bad in size, texture, flavor and general appearance and quality. We ourselves have been engaged in the patience-trying business of peach growing in this section of western Ontario for ten years, and during all that time we have never had an off year, that is, a year when we have not had peaches. In some seasons our crop has amounted from our own orchards to between two hundred and three hundred bushels. Of course this looks rather small for a business, but you will please bear in mind that we are not yet fairly established, but are

testing, trying, or experimenting in this matter, like mariners on an unknown sea, afraid to launch out lest they should come to trouble. With the view of further testing this matter, we planted out, a year ago last spring, a young peach orchard of about one hundred and thirty trees, embracing some fifteen choice American and Canadian sorts. These young trees are doing remarkably well, and promise before long to show us samples of their beautiful luscious fruits. When that time arrives we hope probably to be in a far better position to deal with the question at the head of this paper.

But to present duty! I gave you to understand some time ago that we have found our home-grown seedlings to be the most profitable in our markets, and this will at once appear from the following considerations: Firstly, the trees are habitually hardier and persistently fruitful. They bear annually large and regular crops of fine flavored and showy fruit, so that we can afford to sell them cheap, and this exactly suits the calibre of many of our customers. If we should go into market with a basket of golden Crawfords, almost certainly the customer would wistfully look at them, take one in his hands and feel of it, and ask, "What is the price?" When being told, he would shrug his shoulders with an unmistakable significance and silently walk away. But if told to "hold on, here is a basket that you can have for half that figure," he would stop, and his calculations would at once be aroused. We could easily sell ten baskets of these cheap peaches while we are selling one basket of the richer but dearer ones. It is only the monied customer, the man of large means, who considers worth of first importance, and gratifies his taste at any expense, to whom we dare show our best and most valuable peaches. Well, you ask, why can you not sell Crawfords as cheap as you can seedlings? Oh! here is the very pith of the question. Every tree will have, say, four bushels of seedlings, while those of Crawfords will have only one, so that four times the trees and four times the land must be employed for their production—at least this is our experience.

But, secondly, we have found no improved variety that will stand the test of our variable climate, and consequently a profitable cropper. It is true we lose no peach wood, but by some means or other the blossoms are rendered fruitless, and our hopes are frustrated. This occurs either during the winter, when the germ is perished in the bud, or in the spring, at or just after the time of blossoming. Just at that particular period we invariably have cold, chilly, perishing winds, sometimes accompanied by frosty nights; these are a sure and certain cure for valuable, tender peaches. Our seedlings, however are habituated, as it were, to this kind of thing, and do not appear to mind it.

Again, the present state and condition of our people, as to their tastes and abilities, are very unsatisfactory as far as improved fruit-growing is concerned. As a general thing in our country towns and villages people are in their elements as respects refined living, and many of them have their abilities sufficiently taxed to secure the bare necessities of life. Their tastes are generally uncouth and their appreciation of objects of luxury in many cases very rude, especially when it applies to fruit. Notwithstanding all these varied discouragements, (and what business is entirely without them,) in good fruit products we are perfectly astonished at the demand annually manifested for it by the people. Our people are in their transition at present; they are being educated, as it were, in these matters, and the demand for improved peaches and good fruits generally is annually widening, and becoming gradually more general. A very short time ago thousands living in these western counties of Ontario never saw a Crawford peach, but now what a change at every exhibition; many are placed on the tables, and every country youngster is thoroughly acquainted with not only their appearance but much rather with their flavor too. It would be a great blessing to us could we successfully persuade more to grow them, so that the temptation to low and miserable pilfering and night raiding our fine fruit orchards should be reduced to a minimum. To our shame, in this country, every man or boy has a right to whatever he can get hold of in the shape of fruit. You will observe that I have said

nothing of our city markets, as my experience there is so slight that it would not really warrant me in doing so; let others more familiar give us their experience in this respect. You will also notice that whenever I have spoken of improved peaches I have mentioned the Crawford, meaning Crawford's Early as the representative of all good peaches, and the golden head of the list.

In conclusion, I beg to remark that the model peach for our markets must be large in size, rounded and plump in form. It must be highly colored, deep-yellow, mottled and striped with bright-red at least on one side, and must be yellow in flesh and rich and melting in flavor; exactly fulfilled by a properly grown Crawford. I maintain, that as this peach properly fills the bill, all other peaches will be successful in our markets in proportion to the degree of proximity to this peach, either the Early or the Late. I think that most of our fruit growers will at once endorse this description.

PATENTS FOR IMPROVED FRUITS.

BY A. HOOD, BARRIE, ONT.

It has long been felt desirable that there should be some means of securing to those who confer benefits on the human race, by improving the quality or adding to the variety of its fruits, vegetables, and cereals, a part of the value of those benefits, in some measure proportionate to their worth, and as a reward for their diligence and perseverance; aye, and in some cases to a life-long devotion of their time and talents which have been directed to the attainment of those ends.

It is unjust to those who have labored for the advancement of any particular science or art, that no sooner have they met with some degree of success, and begun to disseminate any improved varieties of fruits they may have been so fortunate as to produce, than third parties step in, propagate the fruits thus disseminated, and place on the market in competition with the original producer before he has begun to reap the reward of his skill and perseverance. It is not necessary to discuss the question as to how far the producer's interest in the results of his skill should extend. It may be an open question whether a man has an exclusive right to the creations of his own brain, whether in literature, in mechanical skill, or the products of the soil. It may be argued that if nature has given an individual talents, he owes something to nature for the gift; that he may not hide his talents under a bushel, but is expected to use them and improve them, not for his own benefit alone, but for that of the whole human race. Be this as it may, no one will dispute that "the laborer is worthy of his hire," and it will scarcely be claimed that labor of the kind under discussion is ever too well rewarded, while it certainly will not be denied that in a great majority of cases the compensation is quite inadequate. It is with a view of suggesting a plan by the adoption of which this long-felt want will be satisfied, that the writer has taken pen in hand; and if in striving to attain this one object some other desirable points should be gained, it will be killing several birds at one throw.

These other points may be briefly mentioned: In the President's address for 1878, he remarked that it was to him "a subject of wonder that a berry so promising as Mr. Reid's 'White Raisin Grape' should be allowed to remain under a bushel for the last ten years, and what is true of this grape is also true of the Fellenberg Plum." "I fear (he adds) something is wrong either with the producer or the Association, or both." That something is out of joint when such

valuable acquisitions are persistently neglected, few will deny; but whether anything is wrong, or only the want of something that is right, may be a subject for discussion. It may be that these fruits have not been offered for sale; that there is not one individual of our population in ten thousand that is aware of the existence of such fruits, much less where they are to be obtained; it is probably only those who have read the reports of the Fruit Growers' Association know anything about them, and a great many of these are apt to forget. Such things require to be brought to the attention of would-be-purchasers, to be shown to them and explained to them, and rely upon it, they would be sold. When patents are taken out for merchantable products, or mechanical inventions, these patented articles are not left on the manufacturer's shelves to sell themselves, but are placed in the hands of travellers and agents, who scour the country soliciting orders. The patentees do not expect people who never heard of their patents to come and buy the patented articles, and why should they, under similar circumstances, to be expected to go and buy improved grapes or choice plums?

So it appears that if any new and valuable fruit is introduced into the world, it may be welcomed by the Fruit Growers' Association; patted on the back by the fruit committee; duly christened by its enthusiastic originator, and then—left to take care of itself, and expected to make a noise in the world as though all nations were waiting to fall down and worship it.

Supposing the ignorance referred to in regard to new fruits did not exist, there is still another difficulty which would very materially retard the sale of them, and that is, that they are in the hands of so many different originators, so that if a person wishes to possess five or six of the improved fruits he will have to apply to as many different people to obtain them. Suppose, for instance, that he would like to have the White Raisin Grape, the Fellenberg Plum, the Burnet Grape, the Diadem Raspberry and the Glass' Plum, look at the number of letters he would have to write, enquiring the price and sending the money, and how many visits to the express office to receive them. Why, there are lots of people who would rather pay for any of these fruits twice over than write half the letters that would be necessary to procure them. And then, you see, they might write to Mr. Dempsey for the Burnet Grape, and he would perhaps inform them that he had placed it in the hands of Mr. Lesslie for sale; and so on, in what nineteen persons out of twenty would consider an endless round of botheration.

And still another difficulty presents itself in regard to introducing some chance seedlings, which it is hoped the plan to be suggested will remedy—It is this: It has happened, and probably will again, that some of our greatest acquisitions are the result of chance, or have been discovered through accident by persons who are not engaged in the fruit or nursery business. The history of our choicest fruits tell us that a great many of them have originated in this way, (the Baldwin Apple for one) but history does not tell us how many equally valuable may have been lost to the world, simply because the possessor or finder had no interest in, or could reap no profit by, endeavoring to make them known, until perhaps the death of the parent tree placed it forever out of the reach of the fruit-loving community. The writer believes himself to be at the present time in possession of a valuable seedling, in regard to which he finds himself in a somewhat similar position to that here described. In regard to all of which it may be said, as was said before, there is something wanting; there is a motive wanted to induce those who possess such rare acquisitions to make them known and spread them abroad.

Now comes the questions, How are we to remedy some or all of these evils? How are we to stimulate the hybridizer—to make known to the world what he has produced? How to introduce and sell those products to those who want them, and to encourage lucky possessors of valuable chance seedlings to bring them forward and place them on the market? As a solution to all these queries, the following suggestions are offered:

That fruit patents be granted for a term of years at a trifling cost to the patentee.

That a patent fruit nursery be established, and all patented fruits placed in the hands of the proprietor or proprietors of such nursery for propagation and distribution.

That none but the proprietors of this patent fruit nursery and the owners of patents be allowed to sell any patented fruits, the latter to sell none but their own patents.

This is merely an outline of the scheme which would necessarily involve the study and discussion of a great many details before it could be put in successful operation, but it is hoped there are no insurmountable obstacles in the way; so with the view of eliciting the opinions of practical men the following ideas are thrown out. In the first place parliamentary aid would be necessary to enable any society to grant patents, and though it may be an open question whether such power should be put in the hands of the Fruit Growers' Association, no patents we think should be granted without their recommendation.

An examining committee would be required, whose duty it would be to examine all fruits for which patent rights are asked, and as the members thereof could not be expected to perform the duties pertaining to their office gratuitously, they should receive such remuneration as the directors of the Association shall see fit, to be paid out of patent fees. It would be incumbent on this committee to be extremely cautious in their recommendations; to give their stamp of approval to no variety, however good, that is not undoubtedly superior in some respects to all similar fruits in cultivation; and let the standard of excellence be such, that the recommendation of the association or its committee shall be a guarantee of excellence to the whole continent.

The establishment of a patent fruit nursery on a proper basis would be of the greatest importance to the success of this scheme; so much so, that the way in which this idea is carried out might make or mar the whole project.

This establishment should be placed in the hands of none but practical nurserymen, who have command of a sufficient quantity of the right kind of soil, in some central locality, to suffice for the probable requirements of the business; and that individual or company who tenders to do the work at the lowest rates to have the appointment, other things being satisfactory; the tenders to be for the propagating, growing, and selling all the different kinds of fruits when sold by the dozen, the hundred or the thousand. Let then the patentee add to these prices a further sum within certain limits, which sum or sums shall be paid to him as his profit on his patent, and he not to be allowed to sell for himself the same fruits at any less price; the nurseryman to furnish security that the patentee's shares shall be duly accounted for.

Tenders may be received from any parties, whether at present engaged in the nursery business or not, but it is thought that the addition to any established nursery of such a department would give such a stimulus to the regular business that reliable nurserymen will be induced to tender at very low rates.

It would of course be best that the nursery farm should be owned by the Fruit Growers' Association, and sub-let by them to the successful contractor; so that in case his management of the business was not satisfactory, he could be removed and another put in his place, which would be better than having to move all nursery stock, as would be the case if he owned the land. The great advantage of this plan would be that one agent would be able to sell any and all patented fruits, and if connected with a nursery could supply any kinds of trees or plants to the same customers, which might be all packed and forwarded at one expense. Private individuals who are in possession of chance seedlings could get them patented and place them on the market as easily as the most extensive nurserymen, and would have as good a chance of realizing a profit.

Finally, let this scheme aim as much to prevent worthless varieties being spread abroad, and

nearly similar kinds unduly multiplied, as to protect hybridizers in the enjoyment of the fruits of their skill and perseverance; and we think it would be a benefit to the public, and a great convenience to the discoverers or originators of new varieties.

NEW VARIETIES OF GRAPES.

At the recent meeting of the American Pomological Society held in Rochester, considerable attention was given to the newer varieties of grapes, of which there seems to be a large number claiming public favor.

Moore's Early was very favorably spoken of by Massachusetts men, particularly on account of the hardiness of the vine and the early ripening of the fruit. In the vicinity of Boston it ripens two weeks earlier than the Concord, and is considered to be quite equal to that variety in flavor. The sample of the fruit shewn by Mr. Moore, and which grew on his grounds at Concord, Massachusetts, was very large and beautiful, but it did not seem to us to be equal in flavor to the Concord as grown here. It was the general opinion that it was a very valuable variety for the north on account of its hardy character and earliness.

The Niagara was also highly praised by several gentlemen who had seen it growing on the grounds of the originator, C. L. Hoag, Lockport, N. Y. This is a white grape, ripening about a week earlier than the Concord. The vine is very vigorous and healthy, an abundant cropper, and perfectly hardy. The fruit has somewhat of the odor of the Concord, but better in flavor. This variety has not yet been disseminated, hence our readers may know that any one offering to sell vines of it at any price is an impostor.

The Prentiss is another white grape, fruit of which was exhibited by T. S. Hubbard, of Fredonia, N. Y. This variety is not any earlier than the Concord, but compares favorably with Allen's Hybrid in point of flavor. We do not expect that the vine will prove as vigorous, healthy and hardy as the Concord, but believe that it will thrive and ripen its fruit under ordinary treatment much better than the Allen's Hybrid, and may be profitably substituted for that sort. This will be offered in the fall of 1880.

The Pocklington is another white grape of large size and showy appearance, but seems to be lacking in quality; from what was said of it, we infer that it is not likely to be a desirable variety to plant in Canada.

The Lady, yet another white grape, was well spoken of by many. It is a seedling of the Concord, ripening before that variety, and of very good quality. A gentleman from Connecticut said that it was the best white grape in that State. The skin is delicate and very tender so that the berries often crack, which may be prejudicial to it as a market grape.

The Lady Washington is one of Mr. Rickett's seedlings, and has probably never been fruited except at Newburgh, N. Y. It is very handsome in appearance and said to be of good quality, but there is danger that it will not prove to have a sufficiently vigorous constitution to resist mildew and thrive under ordinary culture.

The Brighton, though not as new as the preceding, was spoken of by several as having usually proved to be a healthy and hardy vine, ripening its fruit about with the Concord, and excellent in quality.

THE GRAPE-VINE GALL LOUSE (*Phylloxera*

Vastatrix.)

During the present season a number of packages have been received containing grape-vine leaves infested with the Gall Louse, accompanied with letters of enquiry as to the cause of this strange appearance, and whether it betokens serious consequences to the grape vines. From the number of these enquiries, we are led to believe that there may be a number of our readers who would be interested in an account of this insect, for it seems to be on the increase, and may appear next season in vineyards where it has not hitherto been observed.

The accompanying engraving, fig. 11, represents the under side of a leaf covered with the galls, which are fleshy cup-shaped, sometimes purse-shaped swellings, wrinkled and hairy; while the upper side of the leaf shews corresponding depressions, which look like minute cups, having their rims so drawn together as to form small, fuzzy, fimbriated mouths, opening into the cups below. A section of one of these cups is shewn in fig. 12, at *d*, considerably magnified, so that the opening on the upper side of the leaf, surrounded and guarded by minute hairs, can be distinctly seen, the dark part below representing the form and position of the cup, with its fleshy walls covered with hairs.



FIG. 11.

These galls may be found in the early part of the summer, shortly after the leaves have become fully expanded, scattered sparsely on some of the leaves near the ground, and about the size of an ordinary pea. Within this gall the parent louse may be found busily laying little yellow eggs of an elongated oval form, and nearly the one-hundredth part of an inch in length. The appearance of these eggs is shewn in fig. 12, at *c*, highly magnified. The mother-louse herself is about four-hundredths of an inch in length, usually spherical in form, and of a dull orange color. The forms marked by the letters *f*, *g*, and *h*, in fig. 12, shew the mother-louse; *f* being a side view, *g* shewing the back, and *h* the under side. The skin of this insect is shagreened or minutely granulated, and furnished with rows of minute hairs. Within this cup or sack she continues to deposit her eggs until they are all laid, from two to five hundred in number, and then dies and dries up.

In from six to

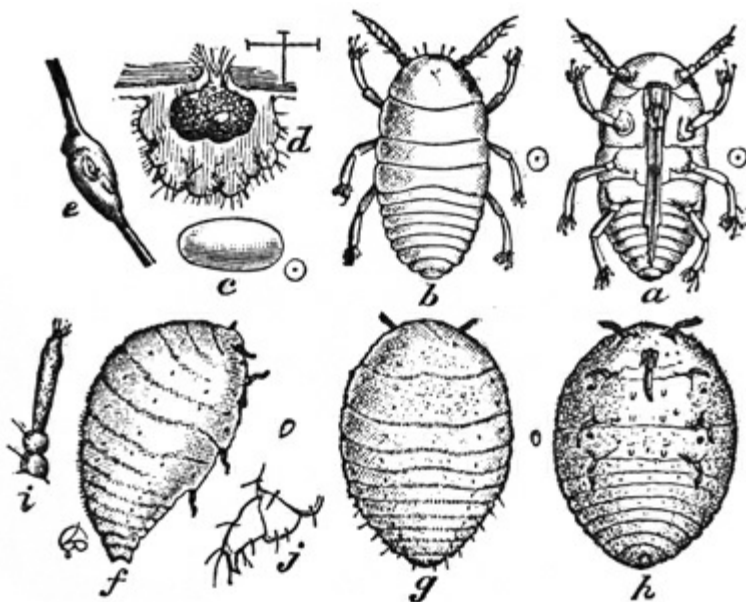


FIG. 12.

eight days the eggs burst, and the young lice come forth. These are little six legged creatures, with two antennæ, and supplied with an instrument for puncturing and sucking up the juices of the leaves. They are represented at letters *a* and *b*, fig. 12, the under side being shown at *a*, the sheath of the pumping apparatus, extending nearly the entire length of the insect, and the upper side or back being seen at *b*.

These young lice are quite active, and creeping out at the mouth of the sack in which they were born spread themselves over the vine, seeking the young and tender leaves near the ends of the shoots. Having found a suitable place for their future operations they settle down for life, and using their proboscis, (which consists of three elastic, wiry hairs, so fine that when they are united they form a thread so small that it can scarce be seen with a very powerful microscope, and yet so sharp that they easily puncture the outer surface or parenchyma of the leaf,) they thrust it into the leaf and commence to pump up and feed upon its juices. This puncture, and the irritation kept up by the insect, causes the under side of the leaf to thicken, and gradually to form the sack or cup shewn at *d*, fig. 12, into which the louse settles as the sack forms; increasing also in size until it presents the appearance shewn at *g* and *h*, fig. 12. Having become fully grown, she is also full of eggs, which without any impregnation from the male louse are fertile. These eggs she lays in quick succession until the gall is filled with them. This production of living issue without assistance from the male is called parthenogenesis, and is not confined to this insect only, but belongs also to other forms of insect life. Having deposited her eggs, the mother dies and shrivels, but from each of these eggs there hatches out a fertile female; these in their turn creep out of the gall and seek the young and tender leaves upon which they fasten themselves, produce more galls, lay more eggs, which again produce fertile females. This process goes on for five or six generations, so that the number towards the end of the summer becomes immense. Sometimes these insects are so crowded that they cover not only the leaves but also the tendrils, leaf stalks and tender shoots, upon which their punctures form knots, as shewn at letter *e*, fig. 12. Suppose there should be one of these insects on a vine at the commencement of summer, and that she laid only two hundred eggs, the lowest average number given by observers, and that each of these two hundred laid two hundred more, and that this is continued for five generations, we have 320,000,000,000 as the progeny of a single mother by the end of summer. Fortunately this prolific creature has its natural enemies, which serve to materially reduce the number, so that at the end of summer they

are not as numerous as their wonderful fecundity would make them.

In the autumn, when the vines cease to make new growth, and consequently the lice can find no tender leaves on which to feed, they leave the foliage and descend to the ground and attach themselves to the roots, from whence they seem to come again on the return of summer, to puncture the young leaves and repeat the gall making proceedings of their mothers. From the fact that no male louse has ever been found among these gall makers, entomologists have concluded that they are but the agamic and apterous female form of the root-feeding type, which means that these never have wings, and never marry, being but the transient summer state of the root-infesting louse, which at every third or fourth generation produces males, and as in that generation both males and females have wings, they can easily spread through a vineyard, and from one vineyard to another.

These leaf gall lice do very little injury in comparison with that wrought by the root-inhabiting type, and by a little watchfulness in the early part of summer in picking off and destroying all leaves shewing any galls, the writer has found no difficulty in keeping them in check.

Fruit growers, and especially cultivators of the vine, are under great obligations to Prof. C. V. Riley for the study bestowed by him upon this insect, for to his careful observations are we indebted for the information given above. Should any of our readers wish to pursue this matter further, and become familiar with the appearance and habits of the root-inhabiting type of this insect, they will find a full description, with illustrations, at page 57 of the Entomological Report, appended to the Report of the Fruit Growers' Association, for the year 1874.

RASPBERRIES.

BY B. GOTT, ARKONA, ONTARIO.

Yes, kind reader, the grateful season of raspberries has again come round, and here we have them in all their richness of variety, size, flavor and perfume. This is above all others emphatically a summer fruit, possessing in a most liberal degree the cooling acids best suited to the general healthfulness of the body in this feverish and intensely heated summer atmosphere. As this country possesses these conditions of summer-time in a very conspicuous and trying manner, so no country can boast of richer, handsomer, or more fragrant raspberries in great variety with which to refresh our languishing, famishing systems. During the week past we have been very busy among the raspberries, and of course our taste, smell and general sensitiveness is almost literally filled with them, and having them too in such great variety we are at once in a position to realize their value, and to compare their merits and demerits among themselves. The surprising fact that most forcibly strikes our attention is the growing demands and keenness of popular relish for the fruit. It would seem that now our people of every position in life are being waked up to realize the real worth and desirableness of good home grown raspberries.

Every patch of indigenous growth, no matter where found or without regard to personal comfort or safety in approach, is frequently visited by eager, famishing pickers, be they mother, or more sprightly son or daughter. Going raspberrying in merry companies is now one of the most pleasant and enjoyable of summer memories. Men of capital, position and intelligence scruple not to direct their attention to this matter, and large plantations of acres of rich

Canadian soil are now being annually made to produce the fruit to supply the popular demands. Enquiries are now being made—both by extensive and diligent reading and by expensive and laborious visiting of plantations already made, as to the most desirable soils, as to the mode of culture and the varieties best adapted to the purpose. All this is a pleasing feature in our progressive Canadian horticulture, and we are improving by it in moral character, in healthfulness and in national position and worth. Whatever stimulates our enquiries, fosters our industries, or promotes our independence, happiness and general prosperity, is a personal and national blessing of the highest type.

As for the preference of varieties, our experience this season has demonstrated most decidedly in favor of Clark, Turner, Naomi, and Philadelphia, for red; Brinkle's Orange or White Antwerp, for white, and for black, Mammoth Cluster, Seneca or Ohio Everbearing. These are doubtless the most profitable varieties to reward our careful cultivation, and will in their progressive ripening amply meet the most covetous demands of "a well regulated family."

HINTS ON CLASSIFICATION OF APPLES.

Professor Beal, of Lansing, Michigan, suggested to the members of the American Pomological Society, at their recent meeting, that he thought that by careful attention to the variety of form in the petals of the flowers of different varieties of apples, some further distinguishing marks might be found which would aid in making descriptions of apples more accurate and certainly distinguishing. Thus far the descriptions given are confined to the form and color and other peculiarities of the fruit alone, but his examinations have led him to believe that the size and shape of the petals are quite constant in any given variety, so that by the addition of a description of the size and form of the petals a greater degree of certainty may be secured in the description of any particular variety. He also had found that the length and breadth of the style of the flower might be also noted for the same end. This will open up a new and very interesting field of investigation for parties interested in the proper classification of fruit; and the results may be of considerable value to fruit growers generally.

The Canadian Horticulturist.

VOL. II.]

DECEMBER, 1879.

[NO. 12.]

ONTARIO APPLES IN THE MARITIME PROVINCES.

We have heard much of the fine apples of Nova Scotia, and that in some seasons their surplus fruit had found a ready sale in the markets of Great Britain at prices which were quite remunerative to the shipper. Such being the case, it would seem like sending coals to Newcastle for Ontario fruit growers to think of finding a market for their apples in any of the Maritime Provinces, so long as Nova Scotia had apples to spare which brought remunerative prices in England; much less would it be thought practicable to find a market for them in Nova Scotia herself. But our President has recently received a letter from Mr. Charles E. Brown, of Yarmouth, Nova Scotia, in which he says: "Since my first experimental order of ten barrels in 1875, I have increased my orders to one hundred barrels last year and this, as acquaintance with their excellence among my friends enables me to dispose of them at cost and charges. In a year or two we shall have all rail connection, and it will then be practicable to order carloads, at less cost for transit than over the present route. There will ultimately be a good market here for Ontario fruit if we can establish relations with reliable growers. Honesty is a very essential point in the fruit as in all other business. In some thirty years experience I have never found a shipper to ever approach Gage J. Miller in average merit of the contents of a barrel of apples. Canada may be peopled by such men, but they don't grow elsewhere."

We called attention to Mr. Brown's orders for Ontario apples in the January number, and endeavored to shew our readers that our sister provinces would become a market for our surplus apples of prime quality, put up with sound judgment and scrupulous integrity. The quotation above given from Mr. Brown's letter sets before us in the clearest light the great importance of shipping only perfect fruit, not allowing a single defective apple to get into the barrel. It is not necessary that the fruit should be of the very largest size possible. Overgrown specimens are not usually as well flavored as those of more moderate dimensions. Each variety has its own natural or normal size when the tree has reached maturity, and no apple should be put up of any variety that is materially below this normal size, and that is not free from all defects and blemishes.

It is a pleasure to be able to say that we know of other shippers of fruit in this vicinity who are equally careful and honest in their packing of fruit, and we would name them here were it not that by so doing we might seem to cast a doubt upon the integrity of others with whose style of packing we do not happen to be acquainted. Those who have, by strict attention to the perfect character of their fruit, established a reputation for sending out nothing but strictly first-class apples, can always command a remunerative price.

The varieties which Mr. Miller sent were the R. I. Greening, Swayzie Pomme Grise, Montreal Pomme Grise, Northern Spy, Esopus Spitzenburg, Westfield Seek-no-further, and Snow Apple. Of these, Mr. Brown says all the barrels contained sound, beautiful fruit, "and my friends often write me in the highest praise of them."

HORTICULTURAL GOSSIP. (IX.)

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

SELECTING APPLES FOR EXHIBITIONS.—No doubt much of the dissatisfaction among exhibitors of fruits about the awards made at our fairs arises from ignorance of those points which ought to guide a wise judge. In nine cases out of ten the intending exhibitor thinks only of *size*, and he selects from his orchard with the idea that whoever shows the biggest will surely win. If he were competing for the best ten varieties, and a pumpkin could by any means be grown on an apple tree, he would surely include it in his list, regardless of its worthlessness in other respects.

A very little consideration will show that this point of size is of little or no value except among cooking apples. For instance, place on the table for dessert on one plate the diminutive Lady Apple, or the juicy, melting Fameuse, or the crisp Swayzie Pomme Grise, and on another the Cabashea, the Cayuga Red Streak, or the Gloria Mundi; then give your guests their choice, and no better test need be made. Even in the same variety of apple, size is not so important as *uniformity* of shape, *fineness* of grain, and *general beauty* of appearance. As a rule the largest Greenings have not the finest grain nor the best keeping qualities; the rule applies to other kinds, and has been well exemplified during this season of abnormal growth. All these points ought therefore to be considered, and that very attentively by the intending exhibitor when selecting his fruit. *Blemishes* of every kind utterly disqualify fruit for competition, but of blemishes the ruinous work of the Codlin Moth is most to be avoided. It seemed hard on one occasion for the writer to agree to set aside plates of huge Cayuga Red Streaks of magnificent form and color on account of this one fault, and award a first prize to a plate inferior in other respects but perfectly sound. But what else could be done! How would it do to have our exhibition tables laden with wormy fruit, and the rearing of that disgusting enemy encouraged among our fruit growers? On one occasion we were just awarding a prize, and my colleague was preparing to place "First Prize" on a beautiful plate of apples, when I said, "Let us look under this label, so carefully pasted on." Oh! see the art displayed in so carefully hiding this worm-hole! How quickly the whole plate was set aside may be imagined.

In collections, much regard should certainly be paid to a selection of varieties that would best satisfy the average planter in the section or country represented. He would want a succession of apples for the year, and as far as possible he would want table, market, and cooking varieties for each month. One collection of twelve varieties we found to consist of winter varieties only, and if quality of fruit and beauty of appearance were the only tests this would have gained the first prize, but considering what poor satisfaction such a collection of twelve varieties would give a farmer for home use, we agreed to set it aside in favor of a better assorted collection.

Correct nomenclature is another all important point in the exhibition of fruit. Indeed, we think that no fruit should be awarded a prize under any circumstances, seedlings of course excepted, that either are unnamed or are incorrectly named. Half the satisfaction of the visitor to the fruit department is lost if articles are unnamed. He goes to correct the mistakes in his own orchard, or to learn new varieties; or he may intend planting, and goes to select the names of prize fruits from which to order, all which advantages are lost if nomenclature is disregarded.

We have given these few hints for the benefit of such exhibitors as are in the habit of finding much fault with the awarding of prizes, hoping that a consideration of these few points

may help them to a more correct judgment.

WISER BY EXPERIENCE.—“Well, neighbor,” says my friend Ignavus, “have you learned anything new this season about *fruit packing*?”

“Yes, two or three things. A fruit grower can hardly pass through a season of practical work and learn nothing. I have learned (1) that it pays to ship large and small specimens in separate packages, and mark them accordingly. We know some appear to think the fine specimens should all be saved for topping, and the small ones should be used for filling up.”

Said Ignavus, “Of course I would not think of packing that way for near markets, where I want to establish a reputation, but you know I ship my poor stuff to a distant city, well topped, and have it sold without my name being attached.”

I say “Shame on such a shamkind of honesty;” don’t you, brother fruit growers of Canada?

Ignavus adds, “Anyway the buyers expect such packing, so they are not deceived.” But is it any reason why we should be a set of cheats because “buyers expect it?”

We therefore lay down another principle, viz: (2) *It pays to be honest*, aside from principle, and aside from self-respect which accompanies such a course. “Put conscience in your barrels,” said a buyer to one of our firm some five or six years ago, and we believe the advice to be golden. At all events it was the means of bringing us an offer from a Glasgow house that surprised neighbor Ignavus, it was so much higher than was current. Only a few days before, he had been watching our packing which was going on inside the fruit house. “You make too many culls,” said he, “it will never pay you; nobody else thinks of such waste, and yet others get quite as good prices as you do.” I said I believed it would pay, and so it has proved.

Another item to be laid upon memory’s shelf is, that (3) it pays to secure plenty of fruit packages long before you want to use them, for it saves your time when you are very busy; it saves your money, since you can buy them early at a reduced price; it saves loss, for sometimes you cannot get them at all if you wait until you and everyone else wants the same article. Only to-day Ignavus was here in great anxiety. He had promised to ship his apples by a certain date, which was just at hand, but he could not get a barrel. One cooper was sick, one had just run out of staves, and another had orders in for a month ahead; could I spare him just a few? He was very thankful for them, and perhaps he has learned something this season about fruit packing too—under this head at least.

We might easily speak of other things which are the result of the season’s experience or observation, but gossip about other people’s failings in one’s own favor may very easily be carried too far, so we will stop, Mr. Editor, lest we have to tremble under your severe censure.

PRUNING OF PEAR TREES.

BY ALEX. GRAY, CLIFTON.

As the pruning season draws near, a few words on pruning the pear may not be amiss. I have one large Louise Bonne de Jersey pear tree, ten years old, growing six feet from my well. It grows six or eight feet of young wood every year, which I cut back in the month of February to six or eight inches, as recommended by books as well as by my acquaintances, besides thinning out side branches. As a consequence I had a beautiful tree, but few pears. Last spring I tried a new plan; instead of pruning in February as directed, I waited patiently until the fruit buds were well formed, and then, instead of cutting back to a certain length, I left on every fruit bud that I could see, and cut the rest as close as possible. The result was, this fall I had bushels of choice pears instead of dozens, and near the top of the tree there was one remarkable bunch of twenty-six pears on a twig eighteen inches long, the pears entirely covering the twig from the point half way down, which by the old system of pruning would have been cut off. It was voted by all who witnessed it to be the best they had ever seen.

I delayed writing this until I had seen the report of the assembled wisdom of the fruit growers of Canada at Peterboro', and after reading the very able address of my old and esteemed friend the President and others on pruning, I concluded to send this to the printer, as it might help others as it has helped me.

ADDRESS DELIVERED BY THE HONORABLE MARSHALL P. WILDER, AT THE SEMI- CENTENNIAL ANNIVERSARY OF THE MASSACHUSETTS HORTICULTURAL SOCIETY, SEPTEMBER 12, 1879.

BY R. BURNET, LONDON.

The honorable and venerable President of the American Pomological Society delivered the semi-centennial address before the members of the Massachusetts Horticultural Society. Like all the productions of his pen, this address is fraught with important information and with many items highly instructive to the members of the Fruit Growers' Association of Ontario. We deem a few brief extracts suitable to your columns, only regretting that your space will not allow of the publication of the entire address.

It was told us by an eye-witness that the ex-President of the Society appeared to deliver his charge, supported by two of his friends. The accident which befell the lecturer in the spring rendering such aid agreeable and necessary. It will gratify all the friends of President Wilder to learn that he is gradually recovering his health and strength. Under the blessing of the Almighty we trust to see him long spared to bless and benefit his fellow-citizens and the world at large. The Holy Book says that the memory of the just is blessed. This sentiment seems to have its due weight with Mr. Wilder. He is never weary of recounting the benevolent deeds of those who have gone before him, and who have cherished his favorite culture.

He tells us in the opening remarks that Peregrine White planted the first apple tree, and Gov. Endicott the first pear tree in Massachusetts. From what small beginnings has the horticulture of Massachusetts arisen! After the close of the Revolution the Philadelphia Society for the Promotion of Agriculture was formed, which was soon followed by the organization of the Massachusetts Society of Agriculture. In 1818 the Horticultural Society of New York came into existence; and that of Pennsylvania in 1827, which has continued to the present day. The 24th of February, 1829, was the cold and unlikely birthday of the Massachusetts Horticultural Society, a society which has exercised a marvellous power for good, not only in America but throughout the world. Dearborn, Cook, Manning, Ives, Strong, and Wilder are the initial names deserving of everlasting remembrance.

The first exhibition of the society was held in June, 1829. Thirty varieties of roses were on the table. In August S. R. Johnson displayed Washington plums measuring six inches and a quarter in circumference, and weighing nearly three ounces each. At this exhibition it was said that "the show of fruits and flowers generally was probably never surpassed in New England." The Bloodgood and Urbaniste pears were shown for the first time. In July, 1830, Moorpark Apricots, six inches in circumference, received the premium. The Williams, Benoni, Porter, Hubbardston, Nonsuch, and Gravenstein apples made their appearance for the first time. A single specimen of the Duchess d'Angouleme was exhibited. Geraniums, roses, and chrysanthemums were the only flowers exhibited in any variety. Greenhouse plants bulked in 1831. The Seedling Dearborn pears were shown from the original tree. In 1833 Messrs. Winships contributed a hundred and thirty varieties of roses.

The annual exhibition of 1834 was the model from which all succeeding exhibitions have been formed. The *Gladiolus Natalensis* or *Psittacinus* and Marion Squash were presented. Marshall P. Wilder in 1836 exhibited the *Gladiolus floribundus*. The Belle Lucrative and Beurre Bosc pears were shown by Robert Manning. The first Orchid mentioned came from Marshall P. Wilder. The large yellow Bough apple, the Rostiezer and Louise Bonne de Jersey pears were shown for the first time. The *Phlox Drummondii* was first seen this year. In 1838 the rhubarb and tomato were coming into general cultivation. Hovey's Seedling Strawberry was first shown in June, 1839. The first Dahlia show commenced in 1840, and the following year found Marshall P. Wilder exhibiting the *Lilium lancifolium*.

In 1842 Mr. Haggerston revealed the remedy for the rose-slug. The Elizabeth pear and the Tyson were shown. This year saw ladies admitted to the tables. Gen. Dearborn silences all cavillers. The Bon Silene Rose was first exhibited in May, 1843. The Lawrence and Doyenne Boussock pears, and the Mother, Ladies' Sweet, and Northern Spy apples first brought before the Society. The Beurre d'Anjou pear was shown by Marshall P. Wilder. In 1846, seedling Camellias by M. P. Wilder, the Queen of the Prairies rose by S. Feast, of Baltimore, and the Hovey's Seedling Strawberry received public notice. Medals for prizes were introduced. The hybridization of plants, especially of the Camellia and Dahlia, were in vogue. The *Weigela rosea* was introduced by Mr. Wilder, the Champion of England Pea by Azell Bowditch, and the Jenny Lind Strawberry by the originator. The *Dielytra Spectabilis* appeared in 1852.

1853 was made memorable by the exhibition of the *Victoria regia*. The Concord Grape, the Dana's Hovey and the Beurre Superfin pears were first shown. The first hybrid grape, originated by J. F. Allen, and bearing his name, was shown by him in 1854. This was the first step in the improvement of native grapes. This year was marked by the exhibition from Marshall P. Wilder of the *Cissus discolor*, one of the harbingers of the endless variety of ornamental foliage plants. The *Clematis Jackmanni* was shown in 1856. In 1857 the *Deutzia gracilis*. The *Versaillaise Currant* by W. C. Strong.

The Wilson's Albany Strawberry was shown in 1859. Orchard house culture was becoming general. Hybrid perpetual roses received increased attention. Crawford's late peaches shown, and Clapp's Favorite Pear for the first time.

Rogers Hybrid Grapes first shown in 1861. The *Lilium Auratum* in 1862. The next year witnessed displays of seedling *Gladioli*. The Hunnewell Triennial premiums were established by the generous patron of horticulture whose name they bear, to promote the general application of science, skill, and taste to landscape gardening.

On the third era of the existence of the Society the *Rhododendron Show* on the Common was held in Boston. Ex-President Stickney and John Lewis Russell contributed valuable gifts to the library. Mr. Strong inaugurated the collecting and distributing horticultural information. Ex-President Hovey ably assisted in a series of singularly important volumes. Carpet and ribbon gardening received development; this rendered possible by the introduction of new varieties of *Pelargoniums*, *Coleus*, *Achyranthus*, and *Centaurea*. Sub-tropical gardening was introduced by the use of palms, tree-ferns, agaves, musas, dracænas, caladiums, and similar plants.

The result of these efforts of the Massachusetts Horticultural Society have been very apparent in the increasing market for flowers, not only in Boston but throughout the State. Similar effects are here and there manifest in Canada. The issue is no mean result of half a century's work. The men who have engaged in it, and devoted means, health, and labor for its accomplishment, will live for ever in the memory of grateful successors. The prominent colossal figure amid the many giants who have appeared and graced the annals of the Society is the Hon. Marshall P. Wilder. His indomitable energy, liberality, and executive ability have facilitated grand results. To indicate the monument which he has raised for himself, we have only to say, in the language of another on a different occasion, "circumspice." None can estimate the

benefits arising from the loved labours of the Massachusetts Horticultural Society. They will live in all time, and bear abundant fruit throughout all coming generations.

HORTICULTURAL NOTES

(Zinnias, Ricinus, Datura, Canary Creeper, Glaucium.)

BY A. HOOD, BARRIE, ONT.

Although the Fruit Growers' Association do not as a society discuss horticultural topics at their meetings, or distribute shrubs or flowers to their members, it is not intended, if I judge rightly, that such subjects should be excluded altogether from the pages of the *HORTICULTURIST*. And, indeed, I know that some of their members, in common with myself, would be pleased to see the efforts of the society, as well as the pages of their magazine, directed to both branches, instead of being entirely confined to fruits; and the more so because they can so easily go hand in hand together, without the interests of the one being made to suffer from undue attention to the other, while at the same time two or three very important advantages would be gained. In the first place, the transactions of the society would become interesting to a much larger number of individuals; and the class from which members of the society might be obtained would be more than doubled by including all lovers of flowers as well as cultivators of fruits. In the second place, we should at once interest the ladies, (a great point gained,) and they would induce their husbands to become members of the society. And, thirdly, if in the plant distribution a choice were given between fruits, flowers, and seeds, numbers of individuals who have not room to plant an apple tree might still enjoy the advantages the society offers, or find in its proceedings sufficient interest to induce them to become members.

Some perhaps may be disposed to argue that the usefulness of the society would be very much lessened by having its efforts partially withdrawn from fruits, which are used as food, and devoted to plants and flowers, which serve no useful purpose, and the cultivation of which some might say is only a waste of time. I remember some years ago an acquaintance of mine making use of this sort of argument in regard to my partiality for ornamental gardening. "What is the use," he asked, "in spending your time cultivating those things? They are neither meat, drink, or clothing, and are of no use whatever; remember that utility is the true criterion of value, therefore to spend your time on that which is of no use is to waste it." The reply I made him was one that he did not find it easy to answer at that time, and I question if he has found a presentable solution even yet. It was, "Whatever tends to make any part of the human race happier is useful." I might have completed the syllogism, by adding, The cultivation of flowers, has that tendency, therefore such cultivation is useful; but I think my meaning was sufficiently plain.

This reminds me of an Irishman that I once had in my employ, who took it into his head that some of the products of my flower garden were eatable. I was putting out my bulb roots, tulips, hyacinths, &c., when he picked up a large hyacinth bulb, and with a curious wondering smile on his face, asked, "What do you do with these?" I explained to him that I was going to plant them in the ground, and they would flower in the spring. "But what I mane is, what use do you have for them? How do they be cooked? Do you boil 'em, or bake 'em like onions, or do they be made into pies?" I made no reply to this for about ten minutes, and during that time,—well, when I came to look at them I didn't have so many bulbs to plant.

But this is digressing. I commenced to write about Zinnias. I wished to let the readers of the *HORTICULTURIST* know that I have this year succeeded in growing splendid Zinnias, and to tell them how it was done. A good Zinnia is a beautiful flower, as double as a Dahlia, flowering

much earlier, and continues till cut down by frost. But—and the “but” in this case is a very serious one—it is so difficult to get good ones. I have tried them a good many years, and found the majority of them little better than ox daisies, so I concluded to try them no more, and purposely omitted them when ordering seeds, but Mr. Vick thought I ought to have them, and so sent me a paper gratis. They came up as thick as hail, every seed must have grown, but as I thought so little of them I gave more than half of them away, and I’ll tell you what I did with the other half. I planted them in the coldest, stiffest, wettest, and most unworkable clay it was ever my misfortune to have anything to do with; a clay on which scotch thistles only grew to the height of eight inches, and Morning Glories only ran about eighteen. A great many flower seeds refused to grow at all, and those which did grow, with a few exceptions, did little good. A few strawberry plants that I found on the ground when I moved here are just living, but not increasing, while some from the same plot that I transplanted into a more suitable soil grew so rampant that they would soon have run my Wilson’s out of the field altogether if I had allowed them. Such was the soil in which I planted those Zinnias, and yet they have grown to be the most splendid specimens I ever saw, double as Dahlias, with a depth of about two inches from the flower stalk to its crown, and scarcely an inferior specimen among them. Now, was it the seed, or was it the soil that produced this unusual perfection? Have any of my readers had a similar experience?

It may be interesting to some amateurs to know that I have this year in this locality succeeded and been much pleased with the Ricinus, Datura, and Canary Creeper. The latter appears to be hardy, grows rapidly, spreads and extends itself immensely, so that a few plants would cover a summer arbor, and produce a profusion of flowers in uninterrupted succession till cut down by frost.

The Ricinus produces no flowers, but its large eight to ten lobed, deeply cut, star-like glossy leaves with serrated edges, and the brighter gloss and deeper green of the newly opening lobes, all spreading out symmetrically from the main stalk, are beautiful in their regularity; and the whole plant strong, healthy looking and vigorous in its growth, is a striking object when planted alone, as it always should be, or in the centre of a lawn. They have attained a height of four feet with me, and would certainly grow much larger in a warmer climate.

The Datura is evidently more tender than either of the above; still, although a perennial, I have succeeded in obtaining flowers the first season from the seed; they were however only just permitted fully to expand before being nipped by the frost. The size of flowers is extraordinary, and their development curious, presenting before being fully opened out very much the appearance of an old fashioned silk lined parasol edged with lace when half opened. I must not forget the Glacium, with its white downy foliage; so beautiful for ribboning, and such a splendid contrast to the dark foliaged plants. It appears hardy, and easily cultivated.

THE ADVANTAGE OF LOCAL REPORTS.

BY REV. VINCENT CLEMENTI, B. A.

The season having at length arrived when—after an unprecedented spell of fine, warm, not to say hot, weather—the gardening operations of the year are well nigh ended, save perhaps the planting of tulips and other hardy bulbs, the pruning, laying and mulching of vines, and, in general, the making all things “snug” against the time now fast approaching, when winter will once more “bind in frosty chains the fallow and the flood,” it may not be regarded as inopportune to submit a few remarks respecting the advantage of preparing local reports for the information of the members of our Association—information that may be sought as well as imparted through the instrumentality of the *CANADIAN HORTICULTURIST*.

When we take into consideration the vast extent of the Province of Ontario, within whose boundaries the operations of our Association are confined, and when we contemplate the diversities of climate which in consequence of its large area this Province exhibits—diversities caused partly if not principally by its proximity in some localities to the mighty inland seas that constitute its southern and western boundaries, or by its remoteness, towards the northern limit of its cultivated lands, from those lakes—and when we take into account the various qualities of soil it presents to our notice, it becomes an important as well as interesting question, What kinds of fruit trees or fruit bearing bushes or plants can be grown with the best chance of ultimate and permanent success in the various sections of the Province? Now the only method, or perhaps it should be said the simplest and most satisfactory method, of arriving at an intelligent solution of this question, is to compare one with another reports furnished from time to time by practical fruit growers, whether professional or amateur, who display an interest sufficiently pronounced to urge them to submit such occasional reports for the information of the members of the Association. Up to the present time, such reports have been “like angels’ visits, few and far between;” and emanating as they do principally from that portion of the Province south or west of the city of Toronto, and which may be emphatically designated the “Garden of Canada” afford no criterion as to the advantages or disadvantages attendant upon fruit culture in less favored situations, where greater care, and more abundant labor, and more extended horticultural knowledge are essential in order to secure any measure of success. Not that the employment of such labor and care, accompanied by the acquisition of such knowledge, are to be deprecated, even were it possible that they could be dispensed with. Toil, ever since the fall of man, has been an essential element toward the attainment of success in every sphere of life, and in the pursuit of every business. The cultivation of an orchard or of a garden is one of the pleasures of this life least subject to alloy, but it is scarcely too much to affirm that did every kind of fruit burst into delicious ripeness for the gratification of the palate, did each flower expand its charms in full perfection for the delectation of the eye, without such labor and care, our enjoyment, whether of the taste or sight, would be materially diminished; for man is so constituted by nature that what he obtains without an effort is comparatively worthless in his eyes. An easy conquest of whatever kind is unappreciated. And thus it is the animation of the contest with climate, with soil, or with garden pests that gives the zest to victory.

Still it is undoubtedly useful, and tends much to the saving of an unnecessary expenditure of time and toil, to know what kinds of fruit can be grown successfully and profitably in any particular neighborhood, and what kinds can *not* be so grown. And such knowledge can best

be supplied by those who have experimentally tested the peculiarities of climate and soil, and publish the results of their experiments, and thus aid in carrying out one of the principal objects our Association has in view—the diffusion of useful knowledge. For instance, where it is found on analyzing local reports that any tree has successfully matured its fruit under certain conditions of climate and treatment, it must prove a desirable addition to the orchard or the garden in similar situations. On the other hand, where a tree is universally condemned it is scarcely worth while to plant it, although care should be taken not to reject one that may have been exposed to an injurious aspect or to faulty cultivation, more especially with respect to mulching, and which under other and more favorable circumstances might turn out to be an acquisition.

It would also add much to the interest and usefulness of local reports to say whether the insect pests were prevalent during the past year,—for they are all more or less abundant, sometimes swarming, sometimes “conspicuous for their absence,” in varying seasons—together with such remedies as may have been successfully applied for their extermination, appended to such reports.

BLACK FUNGUS ON THE SNOW APPLE.

BY JOHN CROIL, AULTSVILLE.

I sent the Editor this morning a sample of diseased apples. I am sorry to say the complaint is common here, and more hurtful to us than the dreaded peach yellows or plum black-knot is to you. I must say I seem to have suffered more than my neighbors, and am at a loss to know why, unless I have killed with supposed kindness. This idea was somewhat strengthened lately, when on looking at one of my neighbor's apple bins of the same species (the Fameuse), I found that the fruit was free from spots, and in every respect superior to mine. I questioned him about his orchard management, but he assured me there was little management about it. He didn't manure it in any shape, unless the name could be given to an occasional pailful of soap-suds administered by the washerwoman to a few trees the nearest to the house. He had not applied lime, ashes, or any other fertilizer for years. His trees were mostly growing in sod, crowded into space less than half the distance we would allow. He pruned very rarely.

I have adopted treatment directly the opposite. My orchard has been faithfully cultivated ever since planting, ten years ago. I have given repeated heavy dressings of unleached ashes, at other times liberal applications of barn-yard manure, and have pruned regularly in June. I feel almost inclined to adopt the text in Isaiah v. 4.—“What could have been done more to my vineyard,” &c.

My more fortunate neighbor, with no care or expense, had on trees planted about the same time as mine, finer fruit and far more of it. As to my trees not bearing so heavily as I would expect, I begin to think an overdose of manure has encouraged the growth of wood rather than fruit. But I don't fancy anything mentioned in my management is the cause of these mouldy spots. The disease is mostly confined to the Fameuse; when sound, our favorite and most profitable apple. The sample sent is a fair one, not of a few apples here and there, nor confined to old trees, or over shaded ones, but of young thrifty looking trees standing thirty feet apart, the fruit on many of which this year was not worth gathering.

I will be happy to hear suggestions by the Editor or some of the members as to the cause and the remedy.

QUESTION DRAWER.

Mr. Linus Woolverton, Grimsby, at the request of the Editor, has prepared these answers. His experience in growing, handling, storing and marketing fruit, entitles his opinions to great weight.

The following questions are from a subscriber in Meaford:

(1) "Our apples in this part are badly 'spotted' this year, especially the Fameuse (or Snow). The Russet variety escaped best. Please to tell us the cause of this, and how to prevent it."

The most effectual remedy that we know of for spotted fruit is to avoid planting those varieties that bear it. The Fall Pippin, Newtown Pippin, Fameuse, Early Harvest and Rambo, are some years very badly spotted. The Baldwin, the Russet group, the Spitzenberg, Red Astracan, Golden Sweet, Duchess of Oldenburg, Gravenstein, and King of Tompkins County, are seldom affected in this way.

We believe it to be a fungous growth, for which the skin of some kinds is more suited than others. Anything that will increase the vigor of the trees will help to cure it, and to this purpose an application of wood ashes, together with good cultivation will be highly conducive.

(2) "I have lost several trees from the effects of being shaken or rocked about by the wind; they get loose at the roots. How shall I save the others? They are beginning to bear."

We know of no way of keeping trees from being shaken about by the wind except by tying them fast to stakes or posts. We should suppose this difficulty would only present itself where the soil is shallow or very light.

(3) "Please to give us some instruction as to the best method of picking apples and storing them."

Apples should be very carefully hand picked. A round basket with a swing handle is the best receptacle for the use of the picker. A wire hook is needed, fastened to the handle, so that the basket may be fastened on a round of the ladder or on any convenient branch; thus both hands of the picker are free for work.

A convenient way of storing apples until packing time, is to take the barrels in which they are to be picked out into the orchard as fast as needed, knock out the heads, placing them carefully in the bottom of the barrels, and each evening draw as many as are filled under cover with a stone boat. They will thus occupy very little room, and can easily be tipped out on a bed of straw as fast as they are required for culling over and packing. This is far more satisfactory than barreling from heaps in the orchard.

(4) "What kind of a building ought to be constructed for keeping say one thousand bushels of apples through the winter, on the shore of the Georgian Bay?"

No doubt the best shape in which apples can be put for keeping through the winter is carefully packed in close barrels, for they will then be less subject to the changes of

temperature and humidity, besides occupying the least amount of room.

No better storehouse is needed than a good cellar for storing one thousand bushels or about four hundred barrels. The temperature should be kept a little above the freezing point, which result can easily be obtained by putting a little fire inside in the most severe weather, and by opening the windows on warm days. Various kinds of fruit houses have been planned and constructed, but as these are too expensive for any ordinary purpose, it seems unnecessary to describe them here.

(5) “Is there any better market apple (winter) than the Baldwin?”

We do not know of a better, all things considered. This variety is an early and constant bearer; the fruit is very evenly distributed over the tree, and is therefore quite uniform in size, which is large enough, and the red color is an attraction enhancing its value in the eyes of purchasers. The quality of the fruit is good, and it can be used both as a cooking and a dessert fruit.

TRANSCRIBER'S NOTES

A table of contents has been added for convenience.

Obvious printer errors including punctuation have been silently corrected, except for the following:

“definitely” to “definitely” on page 33,
“exhibition” to “exhibition” on page 33,
“boquet” to “bouquet” on page 97,
“gobular” to “globular” on page 99,
“Graminae” to “Gramineae” on page 103,
“minature” changed to “miniature” on page 114,
“boundries” changed to “boundaries” on page 118,
“pursuade” changed to “persuade” on page 122,
“indispensable” changed to “indispensable” on page 125,
“pasant” to “passant” on page 131,
“Gage’s” to “Gages” on page 133,
“immegrant” to “immigrant” on page 134,
“disappointment” changed to “disappointment” on page 146,
“circumstances” changed to “circumstances” on page 148,
“succeeded” changed to “succeeded” on page 158,
“Thomas a’Becket” to “Thomas à Becket” on page 163,
“throw” to “thrown” on page 169,
“gratitiously” to “gratuitously” on page 169,
“busines” to “business” on page 169, and
“Rho do dendron” changed to “Rhododendron” on page 184.

[The end of *The Canadian Horticulturist Volume 2* edited by D. W. Beadle]