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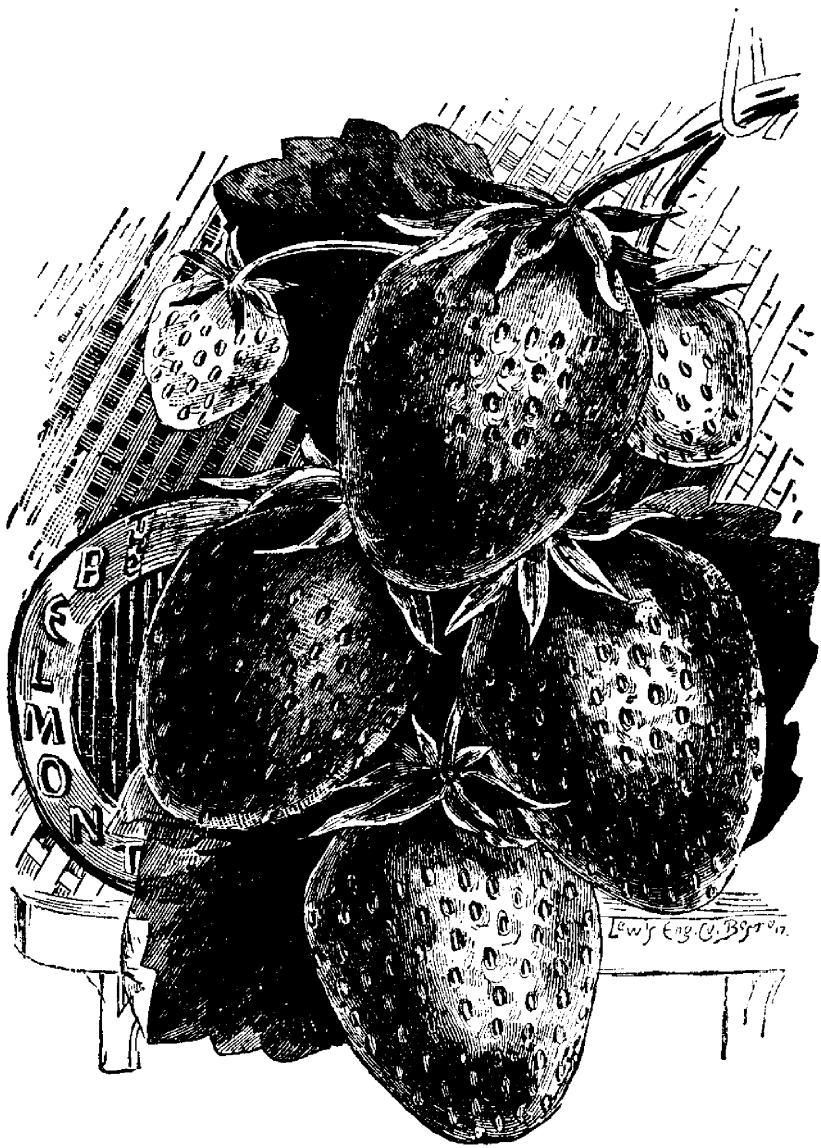
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THE BELMONT.

THE  
**Canadian Horticulturist.**

VOL. IX.]

MAY, 1886.

[No. 5.

THE BELMONT STRAWBERRY.

This new strawberry, an engraving of which appears in this number instead of our usual colored plate, was raised by Messrs. Warren Heustis & Son, Belmont, Mass., U.S.A. It has been tested by them for four years, and they say that they have found it to do well on both heavy and light soils. They also state that the plant is of such vigorous growth that it can mature an abundant crop of fruit, which can remain a long time on the vines without injury; they having realized from 10,700 square feet of ground, scarcely a quarter of an acre, the net sum of \$596.

The originators describe the berry as large, oblong in shape, crimson in color, very solid and sweet, and of extra flavor and quality; also that it colors evenly and perfectly, having no hard or unripe spots, and is quite remarkable as a carrier and keeper.

This plant is also said to produce perfect blossoms, yielding an abundance of pollen to fertilize the fruit; and that the blossoms open so late that they escaped a frost which occurred at Belmont on the thirtieth of May, 1884, injuring seriously all other varieties.

The Fruit Committee of the Massa-

chusetts Horticultural Society in the Report for 1883, state that the special prize of ten dollars offered by the Hon. M. P. Wilder, for the four quarts of the variety of finest form, color, and quality, was awarded to this new seedling, which in color and quality resembles the Sharpless, but is much better in form.

In the Report for 1884, this Committee states that they visited Mr. Heustis' grounds on the 21st of June, and found the vines to be of unusually strong growth, and bearing an exceedingly heavy crop of fruit; that the berries were of large size, good form and color, quality very much like the Sharpless, and that the firmness of the flesh, and exceptionally good keeping quality of the fruit, must make this a desirable market variety.

Some of the dealers in fruits in Faneuil Hall, Boston, Mass., say that the fine flavor, aroma, and color, together with its splendid keeping qualities, make the Belmont by far the best they handle, selling during the past two seasons at least one-third higher than any other berry of its season. The *American Cultivator*, published in Boston, stated last July that the Belmont sold

in Quincy Market forty per cent. higher than any other berry offered in the week.

We are indebted to Messrs. Parker & Wood, dealers in plants, seeds, agricultural implements and machines, 49 North Market Street, Boston, Mass., U.S.A., for the electrotype of this remarkable new strawberry, which was engraved from a photograph. We were not able to procure a colored plate for our illustration, but in all other respects this engraving will enable our readers to form a correct idea of the appearance of this new strawberry.

#### QUESTION DRAWER.

##### HOW TO GROW ONIONS.

Can you inform me in your next number the best method for raising good black seed Onions. I am so much pleased with your magazine I would not like to be without it.

Lakeside, Oxford Co. SAM. A. COLE.

REPLY.—To grow good Onions it is important that we select suitable soil and have it properly prepared. The best soil for Onions is a deep, rich, loamy, mellow soil, on a dry bottom, that is well underdrained either naturally or artificially. The Onion will not thrive in a wet, cold ground. A sandy loam that is strong enough to raise good crops of corn or potatoes, will make an excellent ground for Onions. In making your selection of a place for growing them, give preference to one that has been previously well fertilized and tilled with hoed crops and kept clean—such as has raised a fine crop of beets or carrots.

Prepare the ground by ploughing, harrowing it thoroughly, breaking up all lumps, and making it as fine and light as possible. Manure it with fine, thoroughly rotted barn-yard manure, at the rate of twenty-five tons to the acre, adding all the cleanings of the pig-stye, poultry-house and earth-closet that can be spared, and work these into the surface with the harrow. If you can procure them, sow the ground with fine ground bones, at the rate of a couple of tons to the acre, for Onions being an exception to the general rule of rotation in crops, you will find the bones of great benefit for more than one year. If you wish to grow enormous specimens that will take the prizes at our Agricultural Shows, you will find nothing better than to dress that part of your Onion field with a barrel or two of well-rotted onions, in addition to your other fertilizers.

The surface of the ground should be finished off as nearly level as possible, and cleaned entirely of stones, sticks, or rubbish. If you wish to grow on a large scale sow the seed with a machine made for the purpose, which sows two rows at once, making the drills, sowing the seed and covering at one operation. If you only require enough for home use, you can make the drills by hand about a foot or fifteen inches apart, sowing the seed thinly, say about an inch apart in the drill. The drills should be very shallow, mere scratches into which to drop the seed, and the covering is best done with a light roller run over the ground lengthwise of the drills.

In growing from seed it is important to procure the best American grown seed. European seed often fails to form good, solid bulbs. Four pounds of fresh seed will be enough for an acre sown with the machine, and if sown in the garden by hand an ounce will be enough for four hundred feet of drill. Sow the seed just as early as it is possible to get the ground in good condition; the earliest sown yield the heaviest crop.

As soon as the plants can be seen, the ground should be carefully hoed between the rows, either with the wheel hoe or by hand, and the weeds thoroughly cleaned out. The hoeing should be shallow, taking care not to draw the earth up around the plants, but to keep the ground level and clean. As soon as the Onions are an inch or two high they should be thinned out to two inches apart in the row. They may be allowed to grow at this distance for a time, and the young Onions used for the table or sold, gradually thinning out to four inches apart. In field culture, or where there is no market for these very young Onions, they may be at once thinned out to four inches apart.

Timely and thorough cultivation are of great importance to the success of this crop. If the weeds once get the start they will materially injure the growth of the plants, if not entirely ruin the crop; hence, do not let the weeds once get a start, but hoe even if no weeds are visible.

In wet seasons Onions sometimes grow thick-necked. To remedy this,

gently bend down the tops, late in July, with the hoe handle, which checks the growth of top and induces the formation of better bulbs.

#### MEALY BUG.

Please tell me a cure for Mealy Bugs which have got into my little greenhouse and vinery, and seem hard to conquer.

A. D. FERRIER.

Fergus, Ont.

REPLY.—They are hard to conquer. If you are troubled with them on plants in pots, set the pots out of doors when the weather is suitable, and then with your force pump turn a strong stream of water on the plants and wash them off. Be thorough, and turn the stream on while one remains. Repeat the operation in about ten days and until you conquer. The writer has been successful by pursuing this plan vigorously. But in your vinery you must try another plan. Dissolve a pound of potash in three gallons of water; warm it until it is of the temperature of 130°F., and wash your vines thoroughly with the solution, and repeat the operation in a week or ten days. If you see them making their appearance again, and you should maintain a careful lookout for them, repeat the washing. If your grape vines are in a dormant condition, you may make the solution stronger by adding half a pound more of potash.

#### FRUIT IN BRACEBRIDGE, MUSKOKA.

The Canada Baldwin I got in 1884 did not take root. The Fay's Currant in 1885 did well, and the flower seeds gave us some most beautiful flowers.

My orchard of over six hundred fruit trees, planted some every year since '78, is doing first-class. I have over forty different kinds of apples, about seventy-five plum trees, some of them bearing well, also Early Richmond cherry. I believe I can grow any apple tree here that can be grown in Canada. If you could see them in bloom in summer you would be surprised. I have the best trees money can get, and I care for them; that is the only secret of success. Strawberries and all small fruits do well; they cannot be beaten anywhere. I do not believe I have lost a bud or an inch of young wood this winter on any of my trees. I have the Russian Apricot, Quinces, Russian Mulberry, Black Walnut, and Butternut; also ten or twelve kinds of Grapes.

THOMAS COLLINSON.

Please to tell us what kinds of Grapes, and when they ripen.—ED. CAN. HORT.

#### HEATING GREENHOUSES.

Please give your views on heating greenhouses by steam. Which is best, cheapest, and safest—hot water or steam.

GRAINGER & DUKE.

Deer Park, Ont.

REPLY.—Your Editor has not had sufficient experience in the use of steam for heating greenhouses to be able to express a decided opinion. There seems to be a conflict of opinion on this subject among those best competent to decide. The first cost of boiler and piping for steam heating, should be less than for heating by hot water. The cost of fuel for maintaining heat would be about the same in either case. In large establishments

steam has the advantage of water in the matter of the speed with which the temperature can be increased upon a sudden falling of the thermometer out of doors. In a small greenhouse, where the distance the water has to travel is not great, this question of speed becomes of less importance. In steam heating the pipes will cool quickly the moment steam ceases to be generated. In hot water the circulation will continue as long as the water in the boiler is warmer than that in the return pipes. Steam heating will require some watchfulness and judgment on the part of the manager to see that all is in perfect working order continually. The conclusion on the whole is this, we would heat a small private greenhouse with hot water, as at present advised, but a large commercial establishment, if we were now starting one, with steam.

#### THE WINDSOR BEAN.

I shall be glad if you could, through the magazine, give any hints as to growing the broad or Windsor Bean. I and others in my household are very fond of it, but have not had much success with it out here. New Zealand Spinach too, which in England I found very profitable and nice, I am unable as yet to get to grow. Perhaps the seed of the latter may have been at fault.

A.

Hamilton, Ont.

REPLY.—Our soil being a sandy loam we have always found some difficulty with these beans, especially if the season was hot and dry. They flourish best in a rich clay loam, or even a heavy clay soil that has been

well supplied with fertilizers. They should be planted as early as possible after the ground is in working order in the spring. They may be planted in drills about three feet apart, and three inches apart in the drill. When the lower pods on the stalk are set, pinch off the top to insure the filling of the pods. We suggest that in order to hasten their growth in the early part of the season, so that they may not suffer when the hot weather comes on, you sprinkle a little *nitrate of soda* on the ground just before a rain, on each side of the drill, after the plants have appeared. You probably can procure it from John A. Bruce & Co., Hamilton; if not, you can get it of Brodie & Harvie, 10 Bleury Street, Montreal, in a bag of about 280 lbs., at 3½ cents per lb. You will find it a very useful manure to use in the early spring to hasten the growth of early vegetables before the weather is warm enough to supply nitrates from stable manures.

You will probably find no difficulty with New Zealand Spinach in good rich soil—preferably a light soil.

#### PROPAGATING CUT-LEAVED MAPLE.

What is the mode of propagating the cut-leaved maples described in the last volume of the *Canadian Horticulturist*. I have seen some of them growing beautifully near Fredericton. N. B.

Sheffield Academy, Sunbury Co., N.B.

REPLY.—Nurserymen propagate the cut-leaved maples by budding them on seedling maples of the same species. For instance, Weir's Cut-leaved Maple

is a variety of *Acer dasycarpum*, and grows freely when budded on seedlings of the Silver Maple.

#### REPORTS ON PLANTS RECEIVED.

It seems to me useless to report on plants sent out by the Association until they have had time to mature, so that we can give, not expectations, but facts. I have acted on this principle.

In apples I got the Canada and the Wealthy. Both have been winter killed, and are sprouting from the roots.

The Bartlett pear flourished well the first two seasons, but died the third of summer blight. I may say I have tried several kinds of pears, but all died at the age of blossoming, when I found the wood, trunk and branches had rotted from the centre, leaving only a very thin shell of green wood immediately under the bark.

My Glass seedling plum is now a large, beautiful, and apparently healthy tree; but it is a shy bearer. Two and three years ago it had a thin crop of blossoms, and only from 20 to 30 plums each year. Last season it had a full crop of blossoms, but not more than 60 or 70 plums.

The Diadem raspberry (sent out, I believe, in mistake for some other kind,) has done well with me. Last year it continued bearing till the frost came. The berry looks a little coarse from the large size of the facets; but it is of large size, bright red colour, juicy and well flavoured.

In grapes, Moore's Early, received in 1882, has grown well. It bore a few in 1884, and a fair crop in 1885. Bunches and berries about the same size as Champion, ripens about the same time, and is slightly better in quality. Worden, received in 1883, bore last season. It closely resembles Moore's, but is a little better in quality

and a shade later in ripening. The Burnet has proved a fair grower, not too rampant, a moderate bearer, bunches and berry resembling the Isabella, but not quite so large, and liable to be interspersed with a few small, seedless berries. Its time of ripening is about the same as the Concord, and when fully ripe its flavour is delicious. The Prentiss, received in 1884, grew well that season, but was found dead next spring.

These are all received from the Association that I have to report on. I would only add that it is useless to plant grapes here that do not ripen with or before the Concord. They have all to be covered in winter.

If the correspondents of your excellent journal would be a little more particular in indicating their locality, it would add much to the usefulness of their experiences. For my own part, I have spent a good deal of money, time and labor in experimenting with apples, plums and grapes highly recommended in south-western Ontario, which are utterly worthless here.

ROBERT LEES.

Wildwood, near Ottawa City.

#### THE WEIGELA.

Referring to a note in your February number, the Weigela has grown and blossomed with me six or seven years without winter protection. R. LEES.

Wildwood, near Ottawa City.

The *Horticulturist* is a very welcome visitor here, and is always improving.

#### THE BURNET GRAPE, ETC.

As Mr. S. P. Morse gives some very good advice to the readers of your paper to send their experiences, also their successes and failures in all the different branches of horticulture, I will try in my humble way to contribute my mite, in the hope that others may do the same.

The Burnet grape has only had a few grapes on it once, as it kills down badly, but I shifted it to a more sheltered place last year, so I am in hopes it will do a little better. Moore's Early has not done very well, although it has not had a very good chance. The Ontario apple has done very well, and I am well pleased with the fruit. The original tree has been in bearing three years; besides, several grafts which I put on a Talman Sweet have been bearing two or three years. Fay's Prolific currant made good growth last season. The currant borer is pretty bad here, having killed a good many of our plants. We have had no reason to complain of the productiveness of most of the old varieties of currants, of which we have the common red and white, white grape and red cherry, which we think is very sour. We also have the Black Naples currant, which did middling so long as it got good care. Gooseberries do splendidly here when properly attended to, and the worms kept off with hellebore. Houghton's seedling has been very productive. We have two or three English varieties; also the Downing, which does very well. Peaches are a failure, except on very dry land, and sheltered. The common early cherry does very well, but if we want to get many we will have to grow enough for the birds and ourselves too. SAMUEL CARR.  
Sarnia.

#### APPLES, PLUMS, GRALES, ETC.

I have never yet sent you any report of my plants received from the Association, but will endeavour to do so now. My first were a Wagner apple and McLaughlin plum. Through neglect the apple died last year, the borer having girdled it just at the collar, and being engaged in other work I neglected it. The plum is yet alive, and I esteem it very highly. I have some Wagners



grafted, and they are splendid apples. I have some in my cellar to-day (March 11th), and they are keeping good. The Ontario apple is doing well now, but it is subject to dead spots on the bark. The Salem grape was dead when I got it, but I have one that I bought for Salem that in the last ten years has never borne a good bunch of fruit, and I have now cut it down. The Saunders raspberry has done splendidly, and I have never yet seen a raspberry carry such an immense crop of fruit as mine did last year; they were the wonder of all who saw them. The Worden grape was doing well, but I had a man in my garden, a new importation, and he thought it was a very thrifty weed, and the hoe put an end to its existence. The Downing gooseberry does well here, but is not quite as prolific as the Smith's Improved. The Prentiss grape I got two years ago is making a splendid vine, and I look for fruit this year. The Wealthy apple is also doing well. The dahlias I got last year made a splendid root, and I shall hope for flowers this year.

I will just add that the pears I got some years ago have all died by blight, and so have many others that I have planted, so I have given up in despair. Fruit here last year was a good crop.

GEORGE OTTAWAY.

Barrie, Simcoe Co.

#### RASPBERRIES, &c.

For three years I have been a subscriber to the *Horticulturist*, and have learned to prize it highly. Some of the papers published during the past year about strawberries, grapes, raspberries, etc., are alone worth many times the price of the magazine. The Report also contains an invaluable fund of information. While I especially prize articles written by our veteran fruit growers, such as Little, Robinson, Smith, Spotten, Hilborn,

Beall and yourself, yet I am almost as much delighted and profited by the information given to and by our amateur horticulturists.

In the spring of 1883 I received the Hansell raspberry. It made a good growth, and has fruited the past two seasons. It passed through the winter of 1885 very well; killed back a little, but not enough to hurt. In fruiting I find it a week later than the Turner, about the same size, but light coloured, making it difficult to know when it is fully ripe; besides, it is covered with a light bloom resembling a mildew, which spoils the appearance. I also find the flavor very poor. I don't like it and can't recommend it. The Turner, Herstine and Cuthbert are very much superior, and cover the season from early till late among the red to my satisfaction.

I should like to say a word in favour of Shaffer's Colossal, which I consider the best canning berry grown. Combining to a remarkable degree the habit of growth of both red and black, it also unites the qualities of those kinds in the fruit, and for size is equalled only by the Red Antwerp. The maroon colour of the berry is its weakest point before canning, but afterwards it gives the fruit a very rich, deep colour. Another excellent feature is that it never throws up suckers, but propagates from the tips like the black. Every one who saw the yield upon my bushes last season was astonished. To all your readers who want a profitable raspberry for home use, I would say, try Shaffer's; you can't help but like it.

In 1884 I received the Prentiss grape. It is making a fair growth. In 1885 I received the Hardy Catalpa and a Russian apple tree. My Catalpa made a wonderful growth, but as it was still growing and putting out new leaves when winter came, I fear it will

kill back considerably. The apple tree grew about five inches, and promises to do well.

Your correspondents in the March number give a somewhat flattering testimony regarding the Ben Davis apple, but any one who has once bought them for his own use will not be apt to do so again. They are too much like balls of sole leather, tough and tasteless. As long as buyers are guided by appearance instead of quality they will buy Ben Davis, but no longer; still it may pay the grower for a few years longer.

R. B. THORNTON.

Orono, Durham Co.

### WHAT THE PEOPLE SAY.

#### STRAWBERRIES FOR THE FAMILY.

BY T. C. ROBINSON, OWEN SOUND.

The requirements of a family fruit are very different from those essential to a market variety. The firmness which implies safe transportation long distances is entirely unnecessary in a berry that is to be eaten directly from the vine, or that appears on the table within an hour after the little fingers have scared it from its leafy hiding-place. And although size and beauty are very desirable, they do not rank essential, as in the samples on the huckster's stands, which are successes or failures mainly according to the degree of anticipation excited in the great public by their appearance.

The qualities, then, to be sought in a fruit for the household are:

- 1st. Quantity.
- 2nd. Quality.
- 3rd. Size.
- 4th. Beauty.
- 5th. Earliness in one and lateness in another, so as to cover the entire season.

Some persons, where there are not many children, would put quality first and quantity fourth; but probably

most people would rate a family fruit according to the foregoing scale of values.

According to this estimate, after years of careful testing, I consider the following varieties of special value for family use:

*Crescent*.—I put this first because of its earliness. It is the hardiest in plant that I am acquainted with, and the crop is simply enormous. With me it usually gives two pickings in advance of Wilson, and two after Wilson is done, and it gives equal pickings with Wilson all through the Wilson's season. It will bear on any soil where the Wilson will, and many soils where Wilson will not, and the berries are as large, more handsome, not as rich, but sweeter, and the blossoms will stand frosts which kill the Wilson's blossoms. Finally, it seems quite as good as Wilson when cooked; hence for home use I consider it leaves no room whatever for the grand old Wilson in the family garden.

About a week after the *Crescent* comes in we begin to pick ripe berries from the

*Bidwell*.—With me this is the best family berry that I have well tested. Year after year it comes to the front with its immense loads of beautiful fruit. The berries are much sweeter and larger than Wilson or *Crescent*, and I find the crop larger also when runners are kept off. The plant is about the largest and healthiest that I know of. Set in moderately rich soil, 16 inches apart in the rows, and rows 30 inches apart, and runners kept off so that no young plant can take root, the rich, tall, luxuriant foliage will cover nearly the whole surface of the ground. Many of the berries thus grown will measure from two inches to two-and-a-half inches in length, the shape being long conical.

*Seneca Queen* ripens about the same

time as Bidwell, lasts nearly as long, and tastes about as good. It does not bear quite so well as Bidwell with me, but I find that it does better than Bidwell with some of my friends. In truth it seems to be adapted to a wider range of soils than Bidwell; so that if a person had rich, moist soil, about half sand and half clay, I would recommend Bidwell first, but if his soil happened to be very light sand, or stiff clay, or very loose and gravelly, I would say Seneca Queen. In appearance, both of plant and berry, these varieties are very unlike, the Bidwell's leaves spreading out wide, especially the first year, and the fruit being long and pointed, while the leaves of the Seneca Queen stand very erect, and the large, flattened fruit ripens all over at once, with nothing of the white tip so often seen in the Bidwell. On equally good soil I think the berries of Seneca Queen average rather larger than Bidwell or even Sharpless, and the colour is peculiarly attractive.

Towards the end of the strawberry season we find in its prime the royal *Sharpless*.—It cannot compare in productiveness with any of the others just described; but it is so large and delicious and late, that no collection would seem complete without it. I have not seen any other variety yet which will give so large specimens. I weighed one from my grounds that went an ounce and a half, and I have no doubt that larger berries could easily be raised. The plant is very large and healthy, and with plenty of manure and runners cut off, it will give fine crops.

*Manchester* ripens about with *Sharpless*. Some specimens are nearly as large as the largest *Sharpless*, and the average was larger with me last summer. The berry is remarkably smooth, uniform and handsome, the crop fully as large, I think, as Bidwell—larger than that of any other I have men-

tioned—and the quality about as good as Bidwell or *Sharpless*. This fine variety should never be left out; but as the blossoms are imperfect it should have every fifth row planted with *Sharpless* or some other late flowering and perfect-blossomed kind, or many of the blossoms will fail to produce fruit.

Most of these varieties are excellent for market—especially for a near market—but as I have aimed to speak of varieties for home use, I have passed by the market value in describing each.

There are other varieties, such as *Parry*, *Early Canada*, *Atlantic*, etc., that are coming rapidly to the front in value for home use.

But with these four varieties—say 100 plants of each—a family of five could be supplied with delicious strawberries through the first four weeks of the time when fruit is most needed, with some to preserve for winter.

Any good nurseryman should supply the plants for three or four dollars—a moderate cost for such a luxury—for an equal amount of fruit from the grocer's would cost \$10 at least, and not taste half as good.

#### THE DOUBLE POPPY.

The best plant at present known for consolidating, by the interlacing of its roots, the loose soil of a newly made embankment is, according to M. Cambier, of the French Railway Service, the *Double Poppy*. While the usual grasses and clovers need several months for the development of their comparatively feeble roots, the *Double Poppy* germinates in a few days, and in two weeks grows enough to give protection to the slope, while at the end of three or four months, the roots, which are ten or twelve inches long, are found to have interlaced so as to retain the earth far more firmly than those of any grass or grain. Though the plant is an annual, it sows itself after the first

year, and with a little care the bank is always in good condition.

Royston Park, Feb. 24. NATURE.

#### POTATOE CULTURE.

Potatoes may be grown in any kind of soil, but to grow them of good quality requires land of a sandy nature, well drained. To grow them for early market plant the sets in a hot-bed close together about ten days before setting them out in the field, so that they may have a growth of an inch or so in length. Some start them in boxes or barrels in a kitchen or warm room, but that is only for small quantities. Have the land ploughed the fall before, and in the spring work it well with the grubber or pulverizing harrow. Make the drills thirty inches apart. Closer than that you will not have enough of earth to fill them up properly, and there will be more small ones and a great many sun-burnt growing out of the ground. Put one-seventh cart load of rotten manure to a drill of three acres in length. Plant the sets carefully therein, about ten inches apart, covering them gently with a few inches of earth with the hand or feet, taking care not to break off the sprouts; then apply about fifteen pounds of fertilizer (containing a good percentage of potash) to each drill, scattering it over the sets. The sets being slightly covered with earth protects them from the fertilizer, as it is concentrated, and might injure the sprouts. Finish covering with the plough. By using this fertilizer I have had potatoes fit for market ten days before those where I used no fertilizer. In a few days the potatoes will be through the ground. Keep the weeds down by the use of the hoe and cultivator. When the plants are long enough they may be moulded up with the plough. By this means of cultivation we have had potatoes on our mar-

ket by the end of June, bringing from two to four dollars per bushel.

For general crop plough in the manure in the fall, about twenty-five one-horse loads to the acre, for manure in the drill, especially cow manure, tends to grow scabby potatoes. Draw drills as for early potatoes, and use fertilizer also. Never let the drills be drawn a long time before planting and covering; for if the drills remain a day or two in the hot sun the potatoes will get scalded and never come up. It is a good thing to pass the roller over the drills; it keeps the land moist. When the potatoes are on the point of coming up, harrow the drills down with the saddle harrow or a Scotch harrow turned upside down. To kill the weeds use the hoe and cultivator, &c., the same as for early potatoes. We have grown 450 bushels to the acre cultivated in this way. For early potatoes I like the Early Vermont the best. It was a week earlier than the Beauty of Hebron and Early Rose. The Hebron is a popular market variety, but rots easier than the other two. I raised 200 bushels of Early Maine from  $7\frac{1}{2}$  bushels of seed. They resemble the Early Vermont. I have not tested them for earliness together. Old pasture land and clover ploughed in will give the largest yield of potatoes. Change your seed every year, if possible from land different from your own.

M. G.

#### THE NEW DUTIES ON BERRIES.

By the change recently made in the tariff of customs on berries, the duties on a crate containing 54 baskets is considerably increased. The old duty was two cents on a basket, which was \$1.08 on the crate. The duty is now four cents per pound, weight of package to be included. A crate containing 54 baskets will weigh from 90 to 100 lbs.,

which will make the duty from \$3.60 to \$4 on each crate.

#### HOW TO PRESERVE FRUIT FROM DECAY.

At a meeting of the Montreal Horticultural Society, held in February last, Mr. J. Fraser Torrance read a paper, which is published in the *Family Herald and Weekly Star*, in which he gives an account of some very interesting experiments in the matter of keeping grapes and apples in a fresh state, by packing them in cases so that they shall be entirely surrounded with infusorial earth.

We may state, by way of explanation, that infusorial earth is composed of an innumerable quantity of very minute shells. A cubic inch will contain more than a million of these tiny shells, and as each of these holds within its cavity a particle of imprisoned air, it follows that a body of this infusorial earth, although not exceeding an inch in thickness, becomes an excellent non-conductor. For this reason it is extensively used as a covering for steam pipes to prevent the loss of heat.

Mr. Torrance conceives that the conditions essential to the preservation of vegetable substances from decay are the maintenance of an uniform degree both of temperature and moisture; that it is of quite secondary importance what that degree, either of temperature or moisture may be, so long as it be maintained *without change*.

Acting upon this theory, he has constructed a double packing case, so made that there shall be a space of not less than one inch between the outer and inner case on all six sides, which space is packed full of infusorial earth. The fruit is first wrapped in manilla paper and packed in the inner case, the interstices between the fruit filled with infusorial earth as the packing proceeds. When the case is filled the surface is

covered with the earth, so that the lid may close firmly on the contents, sufficient to prevent any movement of the fruit in handling the case. This lid is then covered with the earth until the outer case is full, when the lid of that is closed and securely fastened. By this means there can no change take place in the air immediately surrounding the fruit, and consequently there can be no evaporation of its juices; while the temperature, by reason of the non-conducting character of the infusorial earth, is also maintained without change.

Mr. Torrance also states that this earth is absolutely tasteless, and in confirmation exhibited to the meeting apples that had been packed for four months in direct contact with the earth, and yet retained fully their characteristic flavor as when first plucked from the tree. Further than this, Mr. Chas. Gibb, of Abbotsford, Que., had packed some fresh butter directly in this earth for ten days, and on testing it could not detect the slightest change in flavor. About the end of September last Mr. Torrance sent to Mr. and Mrs. Jack, of Chateauguay Basin, some of these packing cases, together with a supply of the earth, in which they packed a variety of grapes, Agawam, Concord, Delaware, Duchess, Eumelan, and Niagara, also some Alexander and Fameuse apples. By chance the cases containing this fruit were left in an open shed until the frost had become so severe that the mercury fell to zero, but the fruit was uninjured, and Mr. Torrance exhibited to the meeting some of these grapes and apples in a perfectly sound and fresh condition.

The size of case recommended by Mr. Torrance is one not exceeding in capacity a bushel and a half, ten of which would be equal to one ton measurement. For small or delicate fruits he substitutes four trays for the interior case, placed one above the other, and held

securely in the centre of the exterior case by cleats.

The cost of case and packing material he states to be as follows: the double case, forty-five cents; the infusorial earth, laid down in Montreal in bags or one hundred pounds costing one dollar and a half per bag, each bag being sufficient for three cases, would cost fifty cents, and a quire of large manilla paper at a dollar and a half a ream would cost seven and a half cents, thus making the total cost one dollar and two and a half cents per case.

He thinks that this system of preserving fruit in a fresh state promises to be of value to the fruit grower who wishes to keep extra choice fruit for the holiday trade and market it in the cities and towns in severe frosty weather, inasmuch as there will be no danger of it being injured by the frost during transportation. For such purpose the cases could be used an indefinite number of times, year after year. Further, that it promises to be of great value for the export of choice fruit of such a quality that the price to be obtained would be sufficient to pay for the package as well as the freight and charges and leave a satisfactory margin of profit, such as would be the case with tomatoes, nutmeg-melons, peaches, and very choice pears. Inasmuch as these cases can be stowed in the hold of the vessel without fear of injury to the fruit, they can be shipped at lower rates for freight than fruit in ventilated cases, which must always be carried between decks. Also it may be that something can be obtained for the empty packing cases in England, where such articles are always in demand, and likewise that the infusorial earth could be sold for somewhat near the cost, as it is quoted in the British markets at from about twenty to thirty dollars per ton.

In conclusion, Mr. Torrance calls attention to the facilities herein presented

for the safe shipment of our choice and even perishable fruits next summer to the Colonial Exhibition, whereby a complete succession can be kept up during the fruit season, and the fruit arrive in a perfectly fresh condition; and as the fruit can be kept in these cases for a considerable time without fear of decay, it can be allowed to remain stored in the cases until wanted to be placed on exhibition.

It is certainly to be hoped that the gentlemen having the colonial fruit exhibition in charge will make a thorough investigation of this matter, and fully test the value of this method of preserving and transporting fruit in the fresh state. Should it prove to be what Mr. Torrance expects, it will open up such a market for some of our finer fruits and vegetables as will give a new impulse to their cultivation, and so increase the volume of our transatlantic trade.

#### PARIS GREEN FOR CURCULIO.

By permission of Wm. Roy, Esq., Royston Park, Owen Sound, to whom the letter was addressed, we publish the following communication:—

MY DEAR SIR,—In conversation on the train with Senator Plumb, he told me that the past two years he has successfully raised the most delicate and finest flavored fruit, when for fifteen years before they have been destroyed by curculio, and moths, and other insects.

He explains the reason by application of Paris Green to the trees in the following manner:—Plums; after the blossom falls and fruit appears, he mixes, say a dessert spoonful of Paris Green in a good full pail of water, and with a large garden syringe squirts the water on the fruit, leaves and branches of the trees. This he repeats at intervals of four or five days or more, according to the nature of the weather,

for three or four times. He says the curculio will not go near the Paris Green, and consequently the fruit will be saved from the insect.

The same treatment will save the most delicate apples from being pierced by insects that destroy so many of them, and other fruit in the same manner.

And then after the insect season is past, there is plenty of time for rain to wash all the Paris Green off the fruit. The quantity is so small that in any case it would do no harm, as one dessert spoonful will do several trees.

I thought the experiment was worth knowing. With kindest wishes, I have the honor to be,

Yours faithfully, B. ALLEN.

#### THE CULTIVATION OF HOPS.

DEAR SIR,—Will you please let me know through your valuable *Horticulturist* something on the planting and cultivation of hops? I have a piece of very heavy clay land, sloping towards the west. Would it be suitable for hops? How are they propagated? What will it cost per acre for plants? How are they set out and trained? What kind of manure is best? The soil is strong.

Yours etc.,

W. H. HODGES.

Ops, March, 4th., 1886.

#### LOCATION.

In the selection of a site for the hop-yard it is very important that one be chosen where there is a free circulation of air and full exposure to the sun. Low and damp locations are to be avoided, for the reason that the hop-vine is subject to be attacked by a vegetable fungus known as *the mould*, which flourishes in wet seasons and damp locations. Dryness checks the growth of this fungus, hence the importance of a free circulation of air and sunlight.

#### SOIL.

As the roots of the hop-vine are liable to suffer from drought it is important that there be a good depth of soil, and that it be abundantly supplied with vegetable matter. Hence in preparing the ground, it should be deeply and thoroughly sub-soil ploughed. Again, the hop plant is very sensitive to super-abundance of water in the ground, so that in soils not naturally underdrained it will be necessary to thoroughly underdrain the hop-yard. Strong, rich land, having a very considerable depth of soil and thoroughly drained, is an essential requisite to success.

#### PLANTING.

The usual distance in this country is seven feet apart each way, which gives 888 hills to the acre. One strong healthy plant is sufficient to each hill, but planters usually set two or three to guard against failures from any cause. The roots should be spread out, covered with fine mould, pressed firmly about them. In England the hills are raised, but in our climate level culture is the rule. As the hop is diocious it is necessary to have a number of male plants distributed through the plantation. Some planters say that half a dozen to the acre is sufficient, others set three times that number. The best plants are those that have been bedded in the previous spring and made a season's growth.

#### CULTIVATION.

The hops will require to be supplied with poles, two to the hill, tapered to a point at the bottom, and about twenty feet in length. These can be thrust into holes made with a crowbar a foot apart and with the tops inclined from each other. Two shoots may be trained to each pole, fastening them with woollen yarn as they require, because of its elasticity. The ground will require to be kept perfectly clean and mellow with

cultivator and hoe during all the growing season. The hop-vine is an exhaustive feeder, requiring to be abundantly supplied with potash, lime, and sulphuric and phosphoric acids. Gypsum, (sulphate of lime,) Quick-lime, and hard-wood ashes should be spread on the surface and harrowed or cultivated in. Superphosphate at the rate of a hundred pounds to the acre has been used in England with beneficial effect, when the plants required to be stimulated into rapid growth. Barnyard manure must be supplied with liberal hand, and the higher the stock are fed the better will be the manure.

It is of the utmost importance that every operation connected with the cultivation of hops be performed promptly at the proper time, from the time of setting the poles until the crop is harvested.

#### PROPAGATION.

Plants are raised by cutting off the shoots of the preceding year and planting them early in the spring in beds of rich soil, where they are kept clean and well cultivated during the summer.

#### COST OF PLANTS.

We are not able to answer this part of the inquiry, and request any of our readers who have had experience on this point to communicate it through the columns of the *Canadian Horticulturist*. Those who have sets to sell might do well to advertize them.

#### FRUIT AT OWEN SOUND.

The fruit crop in the immediate vicinity of Owen Sound was in some respects very good the past season, and in others almost a total failure. Apples, pears and plums were either a very small crop or no crop, while strawberries, raspberries, and currants were very good. Gooseberries were not so abundant. But we have had perhaps the best crop of grapes that has been

grown here for some years. We very seldom fail to raise good crops of the early varieties of grapes here. The four kinds that seem to be favourites here are Moore's Early and Worden for the best two blacks, and Lindley and Brighton for red. We have not fruited anything in the green grape line that has proved a success yet.

THOMAS BROWNLIE.

NOTE BY THE EDITOR.—Will Mr. Brownlie do our readers the favor to inform them, through the *Canadian Horticulturist*, what varieties of white or green grapes have been tried at Owen Sound, so that those who reside in that vicinity may be saved the disappointment and expense consequent upon planting varieties known by trial not to succeed.

#### SHAKESPEARE AND BERRIES.

##### FRUIT AND SHADE.

"The strawberry grows underneath the nettle,  
And wholesome berries thrive and ripen best,  
Neighbored by fruit of baser quality."  
SHAKESPEARE, Henry V., 1. 1. 60.

This circumstance so graphically noted by the great dramatist as being true in his day, has also been noticed by moderns as still remarkably true in isolated cases. But this will not by any means do for a principle of action. The practical facts underlying successful fruit culture in any times, either ancient or modern, are not exactly in accord with this statement.

Neither would it be either wise or prudent to attempt to verify the deep truthfulness of these statements by planting choice *Daniel Boous*, *Manchesterers*, or *James Vicks*, or even *Jewels* in the midst of untilled negligence, or of rampant choking nettles. Neither is it found in modern practice that the finest results are obtained by thrusting in a plant here and there, even of the



best strains, amongst a numerous and choking progeny of baser sorts.

#### THE WORLD MOVES

and berry growing and successful fruit culture is also found in practice to be moving with it, and that onward.

The only sure and praiseworthy course is to plant only the best samples of the best sorts of fruit plants, and give them the best attention and the best open air culture possible. Allow no intruding or overshadowing plants to occupy even the neighboring soil, or trespass upon the fertility of the ground, or to deprive them of that life-giving and colour inspiring sunshine that all living things are found to need. It will be found by this treatment that not only will the "whole-some berries thrive and ripen best," but they will be in the highest state of possible perfection. Oh, to think of fields and acres of these! Why, it seems the sight never dazzled the eyes of our great teacher, nor the thought ever glanced across his imagination. Although

#### THE STRAWBERRY

will perhaps bear a moderate amount of shade, and do better than any of our other domestic fruits, yet it is found that for best results in product, plenty of room for the plants, good cultivation, and plenty of fresh air and sunshine are absolutely necessary. Let these remarks apply in all their force to those who are

#### ECONOMIZING TOO CLOSELY

in their management of these fine fruits. To those who, to save space, plant their grounds with the larger and more spreading fruit trees, and amongst these plant smaller fruits, as grapes, gooseberries, currants, etc., and in amongst these again, just to fill up you know, thrust in a few choice strawberries, or a starting of newest and best raspberries. This practice, though

it may be economical of ground, is not by any means profitable, and the planter will be the loser by the attempt.

Arkona, March 10, 1886. B. GOTT.

#### WHITE GRAPES AT CLARENCEVILLE, QUEBEC.

In compliance with your request, I will give your readers last season's results in grape culture here, but as the popular mind is at present directed towards white varieties, my notes must be confined alone to the latest introductions in these.

*Duchess* has fruited here for three years, and its value could not be fairly estimated till last season, when it turned out highly satisfactory, and produced as fine fruit as was ever sent to Canada by its introducer, Mr. Caywood, for exhibition. Very few new grapes now produced are any better than those we have long had in cultivation, and only tend to swell our list beyond due proportions; but *Duchess* has come to fill a place for a fair-sized grape of superior quality and showy appearance.

*Mason's Seedling* will be perhaps new to all your readers. Its parentage is Concord, to which it bears resemblance in vigor, wealth of foliage and productiveness; is fully as large in berry, superior in quality, ripens earlier, comes into bearing earlier, and seems to be destined to soon take the place of Martha. It hails from Mascontal, Illinois, and if it continues to do as well will be a decided acquisition.

Mr. Rickett's new discoveries in white varieties places his name foremost as a benefactor in fruit culture. His *El Dorado*, while equal to Concord, one of its parents, in vigor, does not partake of the feeble foliage of Allen's Hybrid, its other parent, but imparts its high quality to the fruit. The berry is large, with a beautiful bloom, ripens early, and thus far is very promising.

His *Lady Washington*, a similar cross, runs to the other extreme as to time of ripening. Where frost holds off into October it may ripen, and its mammoth clusters can only be produced by proper care. His *Nuomi* in foliage shows the weakness of its Muscat parentage late in the season, and its fruit is retarded in ripening thereby. In anticipation of this it is necessary to thin it out, with this calculation, early in the season. It is a long jointed strong grower, and for fine double-shouldered, compact, large clusters of most beautiful color it transcends any out-door grape that I know of. His *Golden Gem* ripens early, but its berry is as yet quite too small to be of much value. This may be remedied in a measure by liberal thinning out of clusters. It is very productive, in habit short-jointed, with delicate small leaf. Without further trial it would be unfair to decide against a grape Mr. Ricketts recommends, and it may yet prove a valuable variety. I have fruited a grape he calls *Undine*, which looks at present favorable, being of large berry, but late; also his No. 346, a long, tapering bunch, of small berry, probably a cross with a *Vitis Æstivalis* species, which may improve after a time. *Empire State* has not fruited here yet. There is good evidence to lead us to view this grape as the crowning success of Mr. Ricketts' labors. Early in September last we were favored with specimens of its fruit from its present proprietors, Pratt Bros., of Rochester, N.Y., though I first saw it in Boston in 1881 at the exhibition and session of the American Pomological Society. Its vigor and health of foliage are remarkable, and the fruit is as fine as it is showy. Though this variety has been placed before the public with modest pretensions, it may in time be found "the grape for the million."

*Peter Wyley* gives promise of being a

popular variety, is a strong grower, with healthy foliage, medium berry and bunch, very fine in quality, and early here.

*Pocklington* did better this season, and fruited as early as Concord, improved in size and quality over previous years. Much of the prejudice against it has arisen through its introducers at first sending out feeble vines propagated from unsuitable wood. Though not showing mildew, its foliage here is enfeebled by extremes of temperature late in summer.

*Prentiss* still bears heavily, and is a good market variety. Its foliage is also affected by atmospheric extremes. With all such varieties the cultivator, early in the season, should leave only the quantity of fruit on the vine which the leaf can reasonably ripen.

*Grein's Golden* again bore very large fruit, bunches small and berries loose. It still drops from the stem when ripe. It may, however, recover from that serious failing as vine gets older; ripens with Concord.

Romell's white grapes have so far been disappointing. *Faith* is the best, but still small in berry and late. His *July*, though very early, drops badly as soon as ripe. *Amber* I dug up after a fair trial as too late. If Romell's *Superior* does not improve it will share the same fate next fall from this cause.

Minor's Seedlings, *Belinda*, *Antoinette* and *Carlotta*, have fruited here for three years—the first quite early and a good cropper; the second a few days later but better in quality; the last has proved late and a shy bearer. We have in the old standard *Lady* a grape as large as either of these, of better quality, and much earlier, though it takes more time for the vine to arrive at a good bearing condition.

*Purity*, a Delaware cross by G. W. Campbell, of Ohio, is a small grape, which compensates for this in exceed-

ingly fine quality, is less vigorous and productive here than Delaware, but without exaggeration a finer grape in flavor. A vine of it should be in every collection.

Still hold Lady and Martha as good profitable varieties; Allen's Hybrid, Sweetwater, and Dr. Underhill's Croton for fine quality of fruit, though unreliable some seasons. Empire State, Centennial, Jessica, Hayes' Golden Drop, and Niagara have not fruited.

Noah, Elvira, Irving, Astrachan, Eva, Rebecca and Perkins I have discarded and dug up.

Some years since, from the remarkable adaptability of this section for fruit culture, I made a venture with several early foreign vinery varieties to test for out-door culture, but one by one departed, leaving only White Sweetwater and Early Auvergne Frontignan. The latter, with good nursing and bagging its elegant bunches, gave good results and a rich, spicy berry, resembling the imported Malaga.

Yours truly,

WM. MEAD PATTISON.

Clarenceville, Que.

REPORT ON TREES, SEEDS, &c.,  
RECEIVED FROM THE F. G. ASS'N FOR TRIAL.

They have nearly all proved desirable, some indispensable, some I would not probably have had but for my connection with the Society, and would not be without for many times the price of membership.

The McLaughlin plum, Clapp's Favorite and Beurre d'Anjou pears, Grime's Golden apple, Downing gooseberry, Saunders' Hybrid raspberry, are all fruits of high, or highest, merit in their respective classes.

The Glass plum grows well, is a fine fruit, but unproductive, seems much better on limestone soils.

The Red raspberry is well flavored, but the *acini*, or fruit grains, crumble

at the touch, and it out-suckers the whole State of Indiana.

I have lost some two or three kinds by accident, and others I have not had long enough to report satisfactorily upon.

The Hydrangea, thoroughly hardy, is one of the indispensables, reinforcing the floral ranks at the right time to prevent a break or halt in the pageant of beauty and grandeur, as it marches athwart the calendar up to when

"Stern winter shuts the scene."

I think that thorough, even severe, pruning out all weak wood much improves the size and richness of the panicles, especially of the later blooming, which otherwise are liable to fall off, somewhat, in these qualities.

*Pansies.*—I must not omit the Pansies. The seed grew well, the flowers, exquisite, and so large,—considering the strain, two inches, full, over banner and keel, and the wings,—and replete with *expression*. There are some varieties that lack this *pensé* characteristic and its charm, wanting which it scarcely deserves the name of pansy. The white and yellow, though pretty enough as flowers, are wanting in that wonderful look which moves one to ask,

"Of what may that flower be thinking?"

I have never seen a really good picture of the pansy. The artists do not seem to catch the spirit of the fairy dream, woven into and pervading the form and color. I venture to predict that if ever the pansy loses its popularity, it will be through the "new variety" men flooding the market with their speechless, soulless, idiotic looking pets under the name of pansies. I saved seed from some of the best, and the children were quite equal to the parents. They observed the fifth commandment, which was very proper in a flower capable of thinking, and therefore morally responsible.

My Asters were not good. A large

willow, with its unwelcome roots and shade, was too near.

A word here with respect to the policy of sending out trees for trial. My personal experience is that when the recipient tastes the delicate fruits, and contemplates the beauty of the flowers, he feels the cords of affiliation drawing strongly, may I not add, tenderly. At all events, they address him in the name of the Association in the most eloquent language of progress and refinement. Nevertheless, the suggestion of H. M. Switzer, Esq., of Palermo, is worthy of consideration; perhaps both enterprises are possible. But of this, in its proper time and place.

You may expect me to say something of the hardiness of varieties. Hardiness is largely a matter of the *condition* of the tree at the time of trial.

#### AN EXPERIMENT.

Six years ago I selected a young native plum, about six feet high, vigorous, and standing on a clay bank, facing south-east. Sometime after it had completed its season's growth, the last of August, I mulched it heavily, kept it moist, and succeeded in starting new growth, I kept it at that till frost. Well, the winter killed that hardiest of trees, and killed nothing else that I had, not the tenderest.

#### AN OBSERVATION.

In 1884, just as the leaves of trees were about one-third grown, there came, at the last of May, a severe frost, accompanied by a wintry wind from the north-west for two days. Within a week I observed the leaves on the Black Ash all withering on high and low land alike. The trees never rallied. Our Black Ash are all killed, yet the Black Ash is a hardy tree. Why then was it killed? Because it was in just that *condition* which made it as susceptible to frost as a tropical plant. Some other foresters suffered slightly, and

some fruit trees considerably, at the same time.

This locality is not one to test the property of hardiness. Although inland, north-west of Lake Ontario about a dozen miles, and about eighteen north of Hamilton city, yet nearly everything that thrives there can be grown fairly well here. I have peach trees seedlings thirty-two years old. The arctic winter of 1884 and 1885 thinned them out. Some survived and bore here and there a peach, in spite of the 64° of frost they had endured. This unusual hardiness is due to *position and soil*. The country lies high and rolling, occasionally rolling up into the picturesque. Nature, when she made our mountain, decided that it should be unique. To prevent the building of any more just such mountains, after laying down the strata of shale, gray sand and limestone, composted the surplus debris, detritus and lithic chips, fragments of slate and granite, and a large percentage of clay, underdraining, and occasionally top coursing, with sand and gravel. Then gashed and scored her work everywhere with gully and gorge of all imaginable depths, through which flow numerous streamlets limpid and trouty. Thus she has supplied herself with a comprehensive laboratory, filter, crucible and alembic, all in one. She is prepared to welcome almost every kind of tree and plant, and give each his proper food "in due season." What with steady and not fitful growth, perfect drainage, and well ripened wood, our trees attain the utmost healthiness and hardiness possible to the genus, species or variety. I have never seen a case of mildew on the grape. No pear blight that went further than to discolor the leaves. I have never lost a branch, so doubt it being true pear blight. The Black Knot never attacked our plum and cherry till it had ravaged the sand and calcareous soils adjacent

Then it stole in by way of the San-Culottes, the degenerate "Fence Corner" varieties. After thus establishing itself, it, like the cholera, seized whatever was nearest of the higher classes.

Though we have such comparative immunity from diseases, the insects sufficiently reinforce them to bring us down to average in regard to quantity.

The Tent caterpillar came, did much mischief, but is rarely seen now. The fall web and canker worm are here, but not yet troublesome. The curculio disfigures some of the thin-skinned apples, and is equal to the whole crop of plum and cherry. Thorough jarring saves the fruit. I have not tried poisons.

The codlin moth sometimes, and of some varieties, takes, with the owner, about "share and share alike." If the Yankees sent the moth here to secure a supply of champagne cider apples, they succeeded. Car-loads are yearly sold them. Those who have turned their orchards into sheep and swine pastures have nearly driven out the moth, while the pork and mutton seem none the worse for the mixed diet.

S. P. MORSE.

Oakville, Halton Co.

#### HOW TO PRUNE THE CURRANT AND GOOSEBERRY FOR PROFIT.

The method I use in pruning the currant, and which will apply to the gooseberry as well, differs in one respect from the usual advice given in the columns of the horticultural journals of the day, viz.: that of cutting back the new growth of the terminal branches about one-half, which will give all the following advantages over the old system of pruning, which was simply to cut out old useless wood, and thin out that which remained.

THESE ADVANTAGES ARE:—

1st. Strong, healthy growth at the top of the bush, where we want it, and

not in an increased number of suckers or sprouts at the bottom.

2nd. Rank foliage, that will remain all season to protect the fruit from sun scalding, and also prolonging the picking and marketing season.

3rd. Larger fruit and longer bunches, for the reason that all the short bunched small currants are produced at or near the terminal buds, and these being pruned off, leave only the best to be developed, and as it is a well known fact that the production of seed is the cause of exhaustion of the plant, therefore small currants produce just as much seed as large, and these being pruned off, relieve the bush of its greatest burden or cause of exhaustion.

4th. Regular bearing, for a strong, healthy bush is always able to bear its load of fruit, because, with this mode of pruning and its advantages, the bush grows stronger every year, and with these come

5th. Other advantages, such as very large bushes with fruit further from the ground, and consequently not liable to get splashed with dirt, and being able to grow very large plants less plants are required to the acre, and will do best planted not less than 5 x 5 feet, or 6 x 6 feet, when horse cultivation can be used both ways, and thus save a great deal of hand labor.

6th. By this mode of pruning, all the medium sized varieties may be made to produce almost as large fruit as the cherry currant.

7th. Currant plantations will last 20 years or more, because the vitality and vigor are always kept up.

And while I could name other advantages for this method of pruning, I have only to say that I have tried it on an acre of different varieties, and others have tried the same, and we have all had results more satisfactory than was anticipated. I believe that

with this mode of pruning, currant culture can be made to give as good a profit for the capital invested as any other fruit now grown for market.

Stoney Creek.

J. TWEDDLE.

#### FRUIT GROWING AT AXE LAKE.

Fruit culture is only in its infancy here, we are struggling against the forest as yet. Small fruits, wild varieties, and what few that have been planted of improved kinds do well. I am intending to try some small fruits this spring. There would be a great opening here for the sale of apple trees, provided they would not winter kill.

JOHN CLAPTON.

Axe Lake, Monteith, Muskoka.

#### THE CANKER WORM.

DEAR SIR,—I think from your description of the habits of this pest there should be no difficulty in fighting it successfully by barring the passage of the moth up the tree, and this can be most conveniently and successfully secured by tying loosely with a single stout cord a width, of say four inches, of cotton batting around the trunk of the tree.

I have, at any rate, found this effective in preventing caterpillars ascending my trees. The wool entangles them so that they can make no progress, and I presume the moth could not crawl over it either. The wool requires to be examined occasionally, especially on the lower side for larvæ, but it is the most convenient method of protecting trees from "crawlers" that I know.

H. PRIMROSE.

Pictou, Nova Scotia.

#### SCALE INSECTS.

Enclosed is "sample" of a supposed coccus, very injurious in my greenhouse and orchard house. These specimens were taken from a weeping ash in

my garden, where it is very abundant; also in orchard house on grape vines and peach trees, and in greenhouse on Marechall Neil and Gloire de Dijon Rose trees. HENRY YOULE HIND.  
Windsor, Nova Scotia.

NOTE BY THE EDITOR.—Alkaline washes are the most efficient remedies for these scale insects. A pound of potash dissolved in three gallons of water, and applied either by spraying the tree or by washing the trunk and limbs thoroughly, will kill these insects. It is better to apply it warm, if possible, say at a temperature of 130° F. When the young insects are running about, add to the above solution flour of sulphur, at the rate of half a pound to each gallon. For descriptions and drawings of many of these scale insects, and of their natural enemies, and artificial remedies, see Saunders' *Insects* injurious to fruits, pages 390 to 423.

#### BLACK SPOTS ON THE APPLE.

It is now generally understood that the black spots on certain varieties of our once popular varieties of the apple are of fungus growth, which, however, have not as yet assumed the form of an epidemic, but only confined to those that have been long in cultivation, such as Fameuse, Early Harvest, Swaar, &c., whilst those of more recent introduction seem to be entirely exempt.

The reason appears to be obvious, the varieties alluded to have passed the meridian of the period of existence nature has assigned them, their loss of vitality in order to produce healthy fruit make them fit subjects for the attacks of these parasites.

A seedling apple tree in this country rarely exceeds in life more than a century, consequently only admits of arti-

ficial perpetuation of the original for but a very limited time, say about half that period. The scions, whether taken from the original or from a grafted tree, it makes no difference in so far as general longevity is concerned, they being only sections of the original, nature not permitting any further extension of life.

In Europe the apple tree from seed will live much longer, soil and climate, particularly the latter, being different; hence the reason why the period of raising grafted trees is more lengthened.

In connection with the apple I may refer you to the peach. All your old and esteemed varieties are succumbing to the same influences, and are dying off with the yellows.

I observe that quite a number of our hitherto abundant bearing apple trees, even although apparently healthy and in prime of life, are beginning to show a scarcity of fruit in comparison to blossoms, such as Pomme Grise, Ribston Pippin, Gravenstein, &c., which are as yet exempt from spotting, nevertheless they are old varieties in cultivation and have become enfeebled.

The varieties alluded to should be planted with caution, and limited in number, because in the ordinary course of nature they will soon become extinct. The production of new varieties should by all means be encouraged, not trusting altogether to natural fertilization.

A great deal can be done now in this more enlightened age by artificial means, and thus produce apples of a superior character to those which are showing evidences of extinction.

The success that has been attained in the strawberry by artificial fertilization is really wonderful, and that, too, within the last decade, a thing unprecedented in the era of strawberry culture.

In corroboration of what I have stated about the apple, may very well

be illustrated by the potato, the period for its artificial perpetuation by section of tubers only extends to some ten years—the period that nature has assigned it. After a few years of productiveness it ceases to be so, becomes scabby (a fungus growth), and finally the rot, another variety of fungus, and then the variety becomes extinct, consequently, as a matter of necessity, it becomes imperative to keep up a continuous supply direct from seeds.

Yours truly,

SIMON ROY.

#### SAUNDERS HYBRID RASPBERRY.

Mr. Saunders' Black Cap No. 53, distributed in 1880 by the Society, is a treasure to us; the fruit is rather small, and of a dull purple color, but so very productive, we can gather three pints from this one plant, enough to make a pudding, two or three times each season, besides stray pickings as the children pass by. I find it throws up suckers occasionally like the red raspberry, and I have thus secured six extra plants. The canes are so strong they seem to have no chance to bend sufficiently to reach the ground and grow from the tips as usual. It is quite hardy and has no thorns.

X.

Cobourg, Ont.

#### GOOSEBERRIES.

Some six years ago I purchased three Crownbob and three Downing Gooseberries, and they have thriven very well, and not a speck of mildew. From long experience I may state that the only manure I apply to Gooseberries is good clean house ashes from wood, and I think that keeps off mildew. I first got a hint of that from the old *Am. Agriculturist*, and I had very good red Gooseberries. British, and they didn't mildew either.

A. D. FERRIER.

Fergus, Wellington County.

## THE CATALPA.

I am afraid the "Catalpa" will not be found hardy enough for many parts of this Province. I have had one here (Cobourg) for twelve years, it grew to be five or six inches in diameter, forming a handsome tree, but the young shoots were often winter killed, and the beautiful blossoms did not even attempt to form any seed pods, as if they were only pistillates. Two years ago more than half of the top died and had to be cut off. A friend, who saw it in this mutilated condition last summer, told me of one he had in his grounds near Chicago, Ill., one twice as large as mine, that had been killed last winter.

My "Ailanthus" is also too tender for this climate, growing too fast to ripen the new shoots, which are thus killed by the frost. It never blossoms either. It has had leaves, the mid rib of which measured fifty-four inches.

Cobourg, Ont.

X.

NOTE BY THE EDITOR.—Your tree was not the *Catalpa speciosa*, which is more hardy than *C. bignonoides*.

## JAPAN QUINCE.

MR. EDITOR,—As it appears to me no one ever answers any questions put in the *Horticulturist* not replied to by yourself, allow me to answer: 1st to "A Subscriber." The Japan Quince is nearly hardy at Ottawa. I have seen it both in flower and fruit. It is one of our handsomest shrubs and should be more commonly cultivated. It would be a nice thing to send out for test by the "F. G. Ass." As a hedge plant, I do not see what object would be gained by planting it, as it only grows two or three feet high. As a single plant it is very beautiful; its habit is rather spreading than upright.

## PLUM TREES IN HEN YARDS.

No. 2. Plum trees grown in hen yards are usually very productive; the hen manure highly enriches the soil. The birds will not allow any sod to grow in their yards, so that the roots of the trees are not dried up by the absorption of the grass roots, besides which, the hens are a terror to any curculio which come in their way. Birds should be kept which do not fly, such as Dark and Light Bramblers, Plymouth Rocks, &c.

## NANNIBERRY.

3rd. The common name for the shrub spoken of by Mr. Cotter, Barrie, is the Nanniberry. I think it is one of the *Viburnum* family. After frost, the berries which hang in bunches, are sweet, juicy, and pleasant. I fancy it could be much improved by cultivation. If Mr. Cotter will furnish me with some of the flowers in spring, I will be glad to give him the botanical name.

## PLUMS FOR ALGOMA.

4th. I would strongly advise Mr. D. Dunn, of St. Joseph's Island, Algoma, to procure Pond's Seedling plum, and the Glass Seedling, especially the former; it is the hardiest cultivated plum we have and is of large size, red, turning to purple on one side when fully ripe. Unfortunately, it is rather a shy bearer.

## PARIS GREEN ON CABBAGE.

5th. The application of Paris Green to cabbage and cauliflower for the destruction of the larva of the Pieris rapae is, to say the least of it, a highly dangerous experiment. A gentleman of this city was very badly poisoned by eating vegetables on which it had been used, perhaps incautiously; he did not recover his health for months afterwards. The use of such active poisons as Paris Green should not be recommended, or used, on any plant of which anything but the root is eaten.

P. E. BUCKE.



## SAUNDERS' HYBRID RASPBERRY.

DEAR SIR,—Having fruited Saunders' Hybrid Raspberry for three years or more, I can say that it does splendidly with me. My soil is a clay loam. The Raspberry should have a place in every garden.

LUKE BISHOP.

St. Thomas, Ont.

## BOOKS, &amp;c., RECEIVED.

*Green's Fruit Grower*, devoted to the fruit farm, garden and nursery, Charles A. Green, Editor, is an eight page quarterly journal, published at Rochester, N. Y. at fifty cents a year. Sample copy will be sent to all applicants addressing Green's Fruit Grower, Rochester, N. Y.

## THE SALOME APPLE.

The Salome apple seems to be growing in favor in Illinois, being very hardy, productive, and a long keeper. The apple is of very good quality, size only medium, color from a light to a dark red or nearly so. Bears well annually, but more heavily alternate years. Keeps well until May or even June. The *Western Rural* says in the issue of June 13th, that samples received at that office from Mr. A. Bryant, were then as sound as bullets, and gave evidence of being good keepers.—*Farm and Garden*.

## HARDEST KNOWN GOOD PLUMS.

Mrs. A. P. of New Hampshire, after saying that Moore's Arctic has not proven hardy, asks is there a hardier plum known of good quality.

On the grounds of the Agricultural College near Moscow, and later at Kazen, and through Central Russia, we

saw trees laden with red, yellow, blue and dark purple plums, of really excellent quality. These cultivated varieties seem to have originated from the apparently indigenous, low, round-topped bushes which we found on the edges of the timber belts along the Volga and other streams of East Russia. In leaf, bud and texture of fruit, these indigenous forms resemble the *Prunus spinosa* of Siberia. We saw thousands of these bushes laden with blue fruit with a rich bloom, which were not more than three feet in height.

The cultivated varieties make low, bushy, round-topped trees not over ten feet high. We imported small trees from Moscow of red, yellow and dark-blue varieties, which we have sent out as Nos. 1, 2 and 3. The Russian names received are long and to us unmeaning. The specimens have not fruited as yet, but the foliage endures perfectly our hot, dry Summer; wood ripens up perfectly in Autumn, and has not colored in the least during the past test Winters in Iowa, Minnesota, or North Dakota.

The question as to their final value does not hinge on their hardiness, or the quality of their fruit; but on their habits of bearing with us, and their relative exemption from the attacks of the curculio. As they blossom late, and the fruit develops rapidly, they will be apt, like our native De Soto, Wolf Plum, Rollingstone, etc., to measurably escape the curculio on account of their succulence during the period of their rapid development.

We are also testing a large blue plum, called "Moldavka" in Central Russia, with six other sorts from Aral. They are all as hardy as our wild plums; all bear fine fruit in their native country, and all have the habit of late blooming and rapid development of fruit.

—PROF. J. L. BUDD.

## MY FLOWERS.

(For the Canadian Horticulturist).

My garden treasures have gone to rest,  
With a snowy mantle o'er their breast;  
The first that drooped her drowsy head  
Was my English rose, of ruby red;  
Then followed her sister, pearl white,  
My darling little "Jacobite."

And "London Pride" fell to the dust,  
As "Weeping Willow" said she must;  
Her dying words were, "None so pretty;"  
This vanity excited pity  
From "Daisy" and "Violet," modest dears,  
They bowed their heads to hide their tears.

Winking Marigolds closed their eyes,  
And gazed no longer on the skies;  
"Sweet William" sighed and looked around,  
His "Columbine" lay on the ground;  
And such a change came o'er Miss Moss,  
She grew so sallow, sear, and cross.

My Scottish Thistle, proudly waving,  
Every storm and tempest braving;  
He cares not tho' Old Boreas rages,  
As Scotia's sons will do for ages;  
My loyal heart so longs to press it,  
But, "Nemo me impune lacessit."

My blooming "Primrose," you shall rest  
With me, within my sanctum nest;  
Precious gift, from dear wee "Flo,"  
Precious flower, I love you so,  
Almost above all things terrestrial,  
My lovely, sweet, "mild-eyed celestial."

Ah, me! I well nigh had forgot  
My golden-eyed Forget-me-not!  
Say, little elf, shall we e'er meet  
Again, beside this garden seat.  
Sweet treasured flowers, since we did part,  
Deep winter lies within my heart.

Montreal.

GRANDMA GOWAN.

## VERY EARLY APPLES FOR THE NORTH.

The Yellow Transparent has a number of rivals among the Russian apples as to earliness of season, size and quality of fruit, and hardiness of tree. August 6th my table showed fine specimens, about equally mature, of Yellow Transparent, Charlottenbaler, Transparent Juicy, Kremer's Green, Blushed Calville, Breskovka and Repka Sweet. These vary but little in season, and all would pass in the East or South for first-class dessert fruits of their season, which is in advance of that of the Red Astrachan and even of

the Tetofsky. At this time I wish to call attention to the two last named, as they are less known and seem to have special merit.

Breskovka was imported from the grounds of the Agricultural Institute at Moscow in 1880. Root-grafted trees are already in bearing, and have proven quite as hardy in the North as Duchess. It has been sent out for trial as No. 152 m. The tree is a nice upright grower, with firm, thick foliage. The fruit in size, color and general appearance, is much like Grimes' Golden; but the basin is wrinkled more, like that of Tetofsky. In firmness and weight the fruit reminds me of the Swaar; yet the flesh is peculiarly juicy and tender, this year slightly in advance of the Yellow Transparent. With further tests, on varied soils, it may show some defect of tree or fruit; but at present it seems to lead the very early dessert apples.

Repka Sweet. At the west we have specially needed an early sweet apple of good quality for dessert use. This seems to meet our wants fully, as it is completely ripe on August 6th, in this late season. It is an early bearer, and the fruit is of fair size, handsome, and really of good quality for table use. In shape, ridging and color, it is much like Benoni; but the scarlet striping is deeper, and covered, next the sun, with bloom. While it will not be popular as a market fruit, it will apparently fill a gap in our Western and Northern list. Its native home is Kazan, Russia; hence it should endure the extreme climate of Northern Dakota. If No. 466 (Repka Kislaja) of the list sent out by the Department of Agriculture, is true to name, it is probably identical with Repka Sweet, yet, singularly enough, the Department translation reads "Sour Turnip."—J. L. BUDD in *Rural New-Yorker*.