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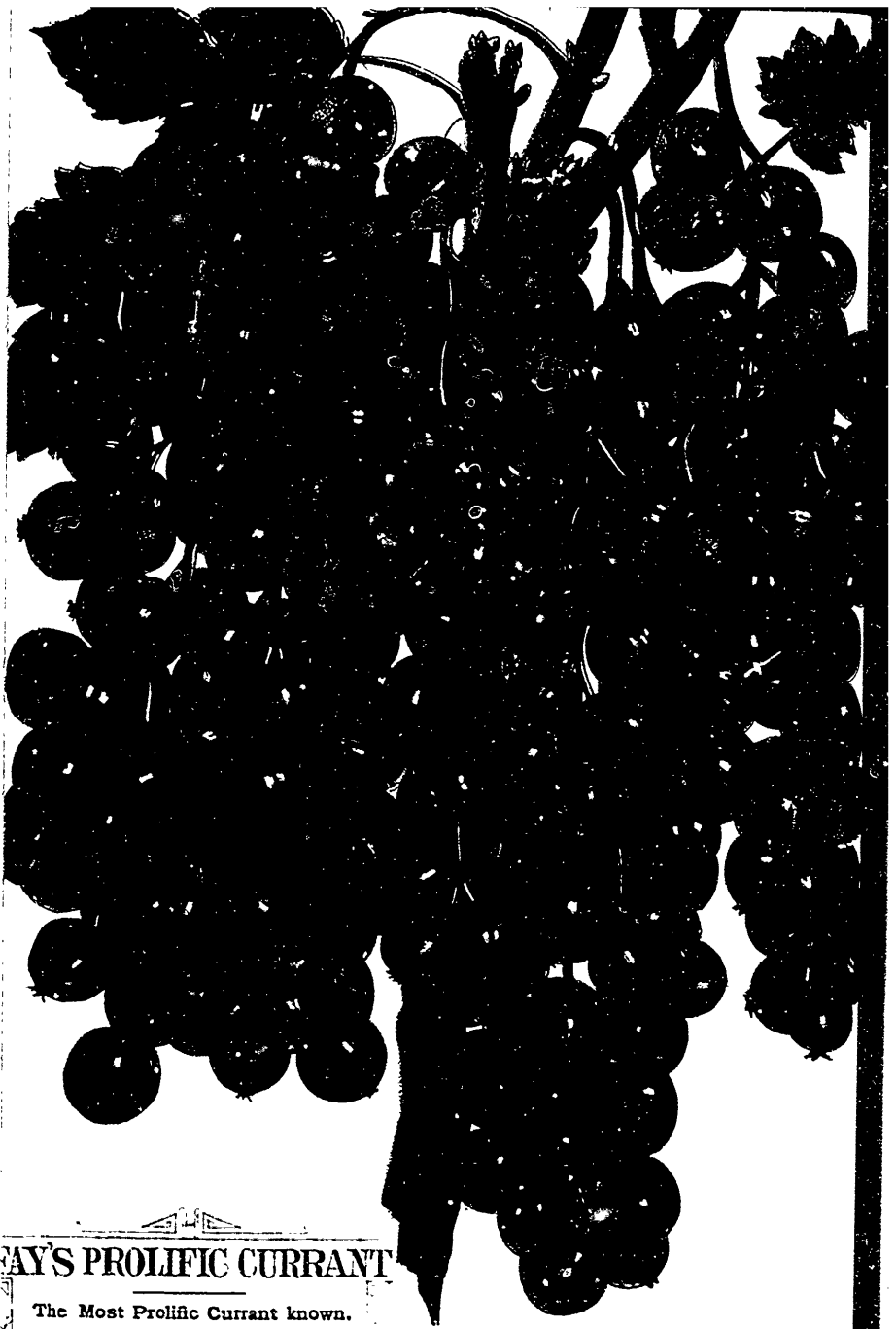
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JAY'S PROLIFIC CURRANT

The Most Prolific Currant known.

Very Desirable.

THE
Canadian Horticulturist.

VOL. VII.]

MARCH, 1884.

[No. 3.

FAY'S PROLIFIC CURRANT.

The oft-repeated expression that "no improvement has been made in the currant for a long time," is no longer true. The variety, Fay's Prolific, a coloured illustration of which adorns this number, is a most decided step in advance. We have had sufficient size in the Cherry and Versailles, but they were very acid, short bunched, and poor croppers. It is true that their large size enabled growers to obtain the highest market rates from those who purchased for table use, but the fruit canneries would not pay these prices, size being a matter of secondary consideration. Thus it came to pass that since the demand for canning purposes sprang up, those growers who relied on the more productive, though less showy, Victoria currant, probably realized more profit from an acre of these than did those who grew the larger and more showy sorts.

It is said that the late Lincoln Fay, of Portland, Chautauque County, in the State of New York, for many years endeavoured to raise a currant that would combine the size of the Cherry with the productiveness of the Victoria. To this end he fertilized one with the pollen of the other, and raised some

thousands of seedlings, from out of which he selected this as the one that most nearly realized his desires. It is now sixteen years since this seedling was obtained. For some eight or nine years Mr. Fay tested this variety by the side of all the sorts in cultivation, until becoming convinced of its superiority in several particulars over any of these, he planted it extensively for his own marketing. About three years ago the writer visited Mr. Fay, and although it was then too late in the season to see the fruit upon the plants, there was yet abundant evidence that his then very extensive plantation of this currant had yielded a bountiful crop.

The Fay's Prolific has fruited for two years in our grounds without receiving any more care than has been given to all the other varieties, and we are constrained to say that it has fully sustained all the claims that Mr. Fay expressed to us regarding its size, productiveness and quality. We have found the size of the berries to be about equal to that of the Cherry Currant, while the bunch is very much longer, and being named for about half or three quarters of an inch from the point of connec-

tion with the plant, the fruit can be conveniently gathered without injury. The yield is much more than double that of the Cherry; writing now from memory, would say it is fully equal to the yield of the Victoria; and the flavor is very considerably less acid than in the Cherry.

Dr. Hoskins, who resides in Northern Vermont, says that he finds the Fay in every way satisfactory and fully equal to the representations regarding it. There is a real pleasure in being able to say, what can rarely be said in regard to a new fruit, that it fulfils all that was promised for it.

Wm. Saunders, President of our Association, at the last summer meeting, said, I grow most other varieties, but I have been really surprised with Fay's. It has received the same cultivation as the other varieties, although I gave a dollar and a half for it, and I must say from what I have seen of it, that I think it is the most promising red currant we have ever had brought before us.

Professor Waterbury, of the State Normal School, at Geneseo, New York, says of it, "it makes a vigorous and healthy growth, is prolific indeed, bearing many long racemes well loaded with the largest and fairest red currants I ever saw; in flavor sprightly and agreeable, less acid than the Cherry. I consider it a decided advance upon any fruit of its class."

Having such testimony in its favor by those who have given it a trial, we commend it to the attention of our

readers, with the request that they will send to the *Canadian Horticulturist* the result of their trials with this new currant.

WOOD ASHES.

In the article bearing the above title, at page 37, February number, a slight typographical error has made the statement as to the quantity of potash, lime, magnesia, etc. in the ashes of beech wood, not only unintelligible but ridiculous. The sentence should have read thus, "Ash from the wood of the beech is said by chemists to contain 9.6 pounds of potash, 33 pounds of lime. 6 pounds of magnesia, 3 pounds of phosphoric acid besides sulphuric acid, to the bushel of 60 pounds." Or it may be stated thus, that the ash of beech wood contains 16.1 per cent. of potash, 3.4 per cent. of soda, 10.8 per cent. of magnesia, 56.4 per cent. of lime, 5.3 per cent. of phosphoric acid, 1.0 of sulphuric acid and 4.7 per cent. of silica.

If this error in proof reading shall have resulted in fastening upon the memory of our readers the real value of hard wood ashes, our readers can afford to pardon the oversight.

A BEAUTIFUL NATIVE PLANT.

One of the most ornamental herbaceous plants is our indigenous Butterfly-weed, or Pleurisy-root (*Asclepias tuberosa*), found everywhere growing wild along roadsides, and on rather dry, sandy slopes, especially southward. It is a perennial, upright herb, about one to two feet high, with oblong lanceolate leaves covering the stems to the summit. Its bright orange flowers are borne in large, terminal corymbs, and when in full bloom densely cover the plants, producing a most brilliant effect. The roots are tuberous, and penetrate the soil to considerable depth. Large plants are

therefore somewhat difficult to move; but small specimens may be transplanted successfully, and will thrive in almost any soil and location; yet sandy loam and a sunny position are most favorable for their growth. The plants should be taken up in the fall after flowering, or early in spring. For adding color to a group of evergreen shrubs in a lawn during late summer and early autumn, nothing can be more effective than a few clumps of these *Asclepias* planted along the outer border.

QUESTION DRAWER.

MR. EDITOR.—Wishing *The Horticulturist* every success, and hoping to see it soon become an interesting journal in the home of every farmer in our fair Dominion, I would beg leave to offer a few suggestions. Would it not be well to give a page or two expressly for questions to be asked by anyone wishing information, and answered only by practical and experienced men on horticulture, and any question pertaining to farming. For instance, I will ask this question. What is the best mode of cultivating a vineyard!

A. COLE.

In reply to A. C., I would say that as soon as the ground is dry enough in the spring to plough, I commence by ploughing from the vines not deeper than four inches. By using one horse to plough the last two furrows next to the trellis, I can plough all the ground except six or eight inches; that space will have to be worked with the hoe; then after a week harrow the ground well. After two or three weeks more I plough again to the vines, using a plough that will throw the furrow well to the centre, then keep the ground well cultivated until the middle of August, no more to be done until after the fruit is gathered. As soon as the fruit is all taken off, give it another cultivating to prevent the weeds from going

to seed. Just before winter sets in, open the furrows between trellises to keep the water from lying on the ground. By no means plough the ground in the fall; it needs to be left as solid as possible for winter.

FARMER AND FRUIT GROWER.

What is the best mode of trellising a vineyard, eleven feet between canes, ten feet between vines.

A. COLE.

Editor's reply to Mr. Cole's suggestion, that the Question Drawer is always open, and any questions received will be published, and any replies sent in will appear in the next number. The Editor will be most happy to receive questions at any time, and hopes that readers will be free to avail themselves of this method of eliciting information on any desired subject.

Will some of our grape-growing readers please reply to Mr. Cole's inquiry concerning the best mode of trellising grape vines?

What profit may be expected in a favorable season from—1st, ten acres of peaches, and 2nd, ten acres of apples respectively? 3rd. Can apples be grown profitably in the neighbourhood of Lindsay; and 4th, if so, what kinds?

SUBSCRIBER.

This question was submitted to the meeting of the Fruit Growers' Association recently held in Woodstock, and the following replies elicited:

1st and 2nd.—One hundred dollars per acre.

3rd.—I think so.

4th.—Duchess of Oldenburg, Ben Davis, Golden Russet, Alexander, Wealthy, Grand Sultan, Talman Sweet.

STRAWBERRY CULTURE.

A correspondent asks how two crops of strawberries can be raised from a plantation in three years.

ANS.—Strawberry plants should be set in the Spring, say in the month of April. During this season they will be cultivated and kept clean. Next year the plants will yield a crop of strawberries, and if well fertilized and kept free from weeds, the same plantation will yield another crop the following year. As soon as this crop is harvested plough under. It is very seldom that the same plantation will yield a profitable crop for more than two years. Another plantation should have been made in the meanwhile, which will be bearing fruit when the old one fails.

May I ask *The Horticulturist*, to state, if a young grape vine planted against, and trained up a fruit tree which has a trunk four inches in diameter at the base, will injure the tree?

R.

Toronto, January 28.

ANS.—In process of time the foliage of the grape vine, unless carefully pruned every year, will so cover and keep from the light the leaves of the tree, as to impair its health and destroy its value as a fruit tree. By proper pruning the grape vine may be kept within such bounds as not to injure the tree to any serious extent, and yet in so much as it keeps air and light from the tree, by so much is it injurious.

REMEDY FOR PEAR-BLIGHT.

A correspondent of the *Fruit Recorder* writing from Kelley's Island, says: "My remedy published in *Fruit*

Recorder some years since, still continues a specific with me, and with all who use it as far as I know. I have not had a diseased tree since I have used it. Those here who neglect to use it have blight. . . . Certain it is, if the trees are washed with strong copperas water from about the 20th of May to 1st or later in June, no pear tree will have blight. Costs as near nothing as may be." A. K.

We presume he means sulphate of iron.

OUR FAILURES.

MR. EDITOR,—A little you've surprised me by the notice that a new feature in the management of your nice little periodical is, that each director is expected at least annually to add to its contents.

It appears to me, Sir, that you have a good deal of *brass* in your constitution. I take it, that as the paid Editor of our journal, it is your duty to sit and write, and write sir, till you take root, and leave us *pair bodies* alone; but rather than have words about it, we'll make a virtue out of a seeming necessity, as best we can.

Not long ago, in mid-ocean, on a beautiful Sabbath morning, a goodly crowd of emigrants had assembled for divine service on the deck of the good steamship *Montreal* bound for Quebec. Some there were full of glee and youthful hope; some too sad and sorrowful; and when, as with one voice, they joined in our grand old paraphrase, "O God of Bethel," they wept when they remembered Zion. One interesting girl I noticed wiping the tear from her old father's face, who was no doubt thinking of loved ones left behind. I didn't hear her words, but I could fancy them, and you also, Mr. Editor, will have but to fancy them too, till

you get that Scotch dictionary we have promised you :

“ Dinna greet faither.”

But a tear dropped frae her ain bonnie blue ee, and the two wept together.

Kind words of sympathy to the sorrowing, and good advice to all, was given by the Rev. Dr. Potts, of Montreal. He counseled them to carry with them to their new homes all they had been taught that was good in the land they loved so well. The land you're going to is a goodly land, he said ; but as you keep us closely to our text, sir, here we leave the little band of sea-girt worshippers, and endorse the words : It's a goodly land, this Canada of ours. In few parts of our fair world does the industrious hand find so liberal a return of good things. If we don't have this it's because we fail in the means to obtain it.

A retrospect of the past brings to the minds of us all many failures ; but as some one wisely remarked at our late meeting, have not our greatest successes often resulted from the study of our failures ? Success sometimes kills. After counting the profits of that extraordinary crop of fruit or vegetables, has not the first idea been to go into it two-fold next year, but how often the result has been different we all know. The season, the soil, the seed, causes many and unknown had to do with it, but the effect was a poor crop.

Have you failed in some of the novelties of the day to sustain the reputation heaped on them ? If you have not, it is because you have been more cautious than some of your neighbors. That strawberry lauded as beautiful and productive, doomed to be the coming one of the season, when you went to gather the fruit, where were the bunches that looked so well on paper ? Didn't echo answer, Where ? Can't you tell a similar tale of rasp-

berries, blackberries, melons, &c. Such disappointments, experienced by most of us, should be no cause for discouragement. Just as sure as the seed is the birthplace of the plant, so sure is the cause of the effect. The exercise of thought and observation will detect many causes of failure. Sift them out. Read over the back volumes of the *Horticulturist*, consult your neighbors interested in these matters, and your chances of success will be doubled. By all means lend a hand in testing new varieties, but don't risk your crop on them. “ Prove all things, hold fast that which is good.”

Have you failed to beautify your home and screen you from summer's scorching sun and winter's stormy blast by planting evergreens ? If so, don't delay another year. A neighbour of mine remarked to me lately, “ I would willingly mortgage my farm for \$500 could I surround my house with a living shelter like yours ;” and yet when planting these very trees I was often asked where the profit was. About that same time I complimented the owner of a well got up house on his taste in planting an evergreen hedge around it. He replied, but there's no money in it ! Oh ! that almighty dollar. That hedge is to-day an object of more admiration than the costly mansion. Let me quote a few lines from the writings of one who realized the beautiful in nature. I'll add nothing more from my rusty pen to mar the beauty of his words :

“ Without disparaging classic taste, I venture to say that there is not a poor worm which we tread upon, nor a sere leaf, that, like a ruined but reckless man, dances merrily in its fallen state to the autumn winds, but has superior claims on our study and admiration. The child who plucks a lily or rose to pieces, or crushes the fragile form of a fluttering insect, de-

stroys a work which the highest art could not invent, or man's best skilled hand construct. There was not a leaf quivered on the trees which stood under the domes of the Crystal Palace but eclipsed the brightest glories of loom or chisel; it had no rival among the triumphs of invention, which a world went there to see. Yes; in His humblest works God infinitely surpasses the highest efforts of created skill."

JOHN CROLL.

Aultsville, Feb., 1884.

WINTER MEETING OF THE FRUIT GROWERS' ASSOCIATION.

MR. EDITOR, — I beg to congratulate the Ontario Fruit Growers' Association on the very successful meeting held here last week. The discussions that took place on the various subjects mentioned in the programme were listened to with deep interest by a large number of our townspeople and farmers, and fruit-growers of the county of Oxford. The original papers contributed and read by their authors were excellent, and I am sure must make the report of 1884, to be published next year, very desirable and valuable reading matter.

The large amount of practical and useful information based on the experience of the various speakers that was elicited during the two days that the meeting lasted, must be of very great benefit indeed to the country generally, and especially to this neighborhood. The interest and value of the meeting was very much increased by the presence of the American delegates from Western New York and Michigan. Those gentlemen, I believe, are large and successful fruit-growers, and were always ready, when appealed to by our excellent President, to give the meeting the benefit of their experience and observation, and that too in so pleasant and agreeable a manner as to make the infor-

mation still more valuable. I can assure you, sir, that the people of Woodstock and vicinity have a more lively appreciation of the usefulness of the Fruit Growers' Association than they ever had before. Several farmers have since informed me that it was the best thing they ever attended in our town, and are anxious to know when we may expect another such meeting.

Yours truly,

T. H. PARKER.

Woodstock, 9th Feb., 1884.

FRUIT GROWING AT CAPE ELIZABETH.

DEAR SIR, — In answer to your favor of the 8th inst., I must say I am not a successful grower of the larger fruits, still I shall be pleased to give you an account of my failures and successes. When I took up land my first wish was to have an orchard growing whilst the other clearing was going on, so when the first two acres were cleared and fenced I sent up from Toronto one hundred apple trees, about five of each of the best sorts I could then read of, five plums, five pears, five cherries, five crabs, one hundred currants, two hundred strawberries, one hundred raspberries. Of the one hundred apple trees five only, all the *Duchess of Oldenburg*, have borne, and for several years they have produced fine fruit. Most of the others were killed out the first season, but about twenty froze to or near the ground and have grown up and been frozen down annually. Several I re-grafted, of which three will succeed.

The plums were all frozen down below the grafts, but have since grown up to trees and produce good preserving fruit, although only wild plums of various qualities. The pears and cherries were all too delicate. All the crab apples did well, and I have had bushels from them the past few seasons. The best sorts are the *Montreal Beauty* and



Transcendants. I think the *Siberian* too small to be worth cultivating. The currants yielded small crops only for several years, but last year did well, and so did the gooseberries. I think if the English gooseberry were protected for a season or two until they got well rooted and were kept clear of the caterpillar, they would succeed. This is the country for strawberries. I have seen finer here than I ever saw before. My present favorites are the *Sharpless*, perfectly hardy, I give it no protec-

tion; and the *Bidwell*. In 1879 $\frac{1}{2}$ I planted the first six plants of the *Sharpless*; in 1881 I sent a small basket of them to the Toronto Horticultural Exhibition and received first prizes from, I am told, about forty competitors. The raspberries were planted in the fence panels and neglected, but I transplanted some to beds and find they pay well for cultivation. The sorts are *Franconia* and *Brinkle's Orange*, *Shaffer's Colossal*, &c.

I think my ignorance of the nature

of the soil had as much to do with the failure of the apple trees as the severity of our winters. My garden, as well as most of the farming land of Muskoka, is good rich soil, surrounded by hills of rock and rolling stones. From most of these hills springs of water are constantly running to the lower lands, and until these springs are cut off and turned into a proper course by drains, the land is kept too wet and cold in places for healthy vegetation. Since draining I have planted *Alexander* and *Tetofsky* apples, which passed through the first winter all living. I planted a second set of pears, plums and cherries, all of which, notwithstanding my draining, are going through the annual process of freezing down and growing up.

The *Glass Plum*, received from the Fruit Growers' Association, has grown a good size, but so far has borne only two plums. A graft from it on a native wild plum is growing stronger than its parents. Of five Spanish walnut trees planted three died, and two are grown beyond risk, one as high as second story window. Canadian walnuts and butternuts were partially frozen, but I think will do when roots get stronger. My English walnuts are growing, but I protected them the first winter. I have a hedge of English filberts and Kentish cob nuts grown from nuts bought in Toronto. The Berberry, Buckthorn and Scotch Sloe are quite hardy. Roses do better here than in Toronto. Grapes will be a success with winter protection. They did not ripen this year, as we had more cloudy than fine days. *Rogers* showed fine bunches and strong wood. The last apples planted are the *Snow*, *Mann*, *St. Lawrence*, *Russet* and *Colvert*, but they have not yet passed a winter.

Yours truly,

F. W. COATE.

Muskoka.

NEW VARIETIES OF GRAPES IN THE EASTERN TOWNSHIPS, PROVINCE OF QUEBEC, SEASON 1883.

Just as the interest in grape culture has been given an impetus through the introduction of many valuable varieties for high latitudes, we have been overtaken by two successive cold, wet, and discouraging seasons, which tend to give us a higher appreciation of the earlier and hardy varieties. On many sections the crop was almost an entire failure. The immunity from frost along the Champlain Valley, Richelieu River, Island and vicinity of Montreal, and some localities on the Ottawa matured most varieties, the best, however, lacking the flavor of favorable seasons and the properties necessary for successful wine making.

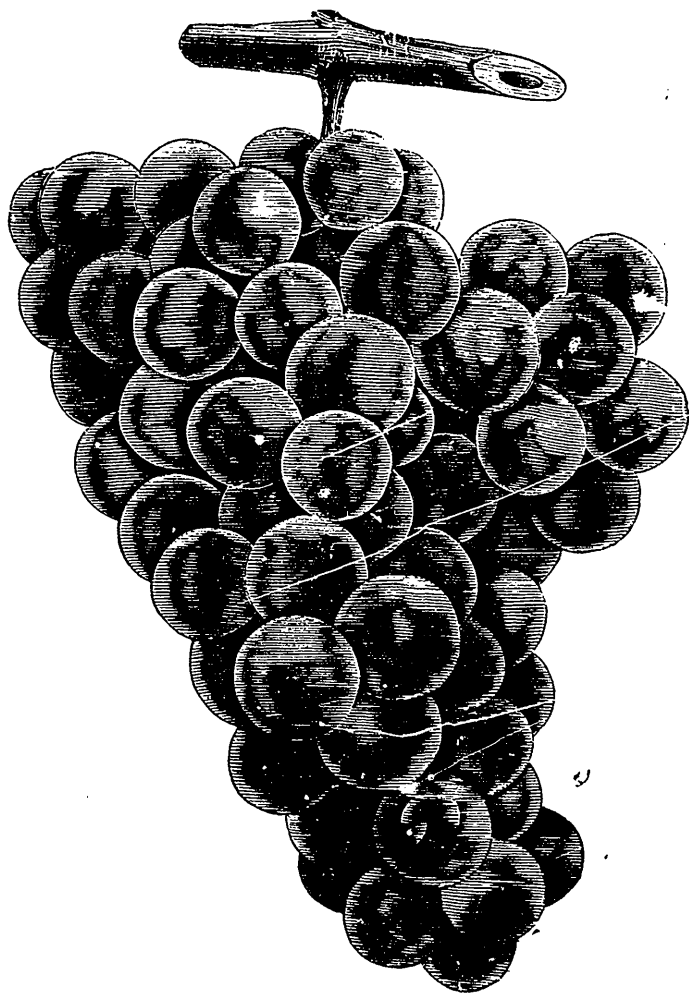
BLACK VARIETIES.

Early Victor has surprised us by its merits, its foliage is remarkable for vigor and resistance of fall frosts, its bearing capacity equally surprising; under proper treatment it may be fairly classed as an extra early variety of better quality than any of the early Labruscas. The Worden, though not very new, is yearly winning its way in popular favor and should entirely displace the Concord in this Province, as it is certain to ripen, of larger size and superior quality, and nearly as vigorous.

More's Early, though early and showy, is so far a shy bearer. Aminia Roger No. 39, has improved in size and productiveness, is a large, rather dark purple, bearing very compact clusters, and is probably the earliest of his hybrids of its color.

Linden, from its large leathery leaf, gave promise of good properties, but was disappointing in fruit, colored the first, but was not eatable for weeks after.

Belvidere has fruited for three years, a profuse bearer, early, large in



EARLY VICTOR.

berry and bunch, drops its berry, and is poor in quality.

Rockland Favorite, a new Concord seedling, ripens early, is spoken well of in central New York, bore its first fruit here.

WHITE GRAPES.

Lady has done exceedingly well the past season, and well repays a little patience; has improved in size, quality and productiveness for two years past, and is undoubtedly the most valuable

early white grape for all parts of this Province. Its introducer, the Hon. G. W. Campbell, of Ohio, has kept this grape before the public, and all who give it a patient trial will not regret it.

Belinda fruited early, and is promising, comes in soon after Lady, but not as good in quality.

Antionette, a few days later, carried fine clusters for its first season's bearing; these two Miner seedlings are remarkable for their hardy foliage, and will probably maintain a place in our fruit list.

Faith, the venerable Jacob Rommel's new white grape, in keeping with its extraordinary vigor, bore an astonishing supply of fruit, small in berry; its merits as to earliness can be better determined as the vine gets age.

Purity, parentage Delaware, a production of Mr. Campbells, gives us a delicate little grape which promises to equal in flavor its parent, and entirely eclipse Croton from same origin.

Naomi, of Mr. Ricketts, though rather late at present, is the most showy white table grape we have, of delicate bloom, and evidently promising thus far.

Prentiss would be very valuable but for its uncertainty in ripening, can only be recommended for highly favored localities.

RED GRAPES.

Vergennes has ripened rather earlier this season, is very hardy and productive, of excellent keeping qualities, preserving its full flavor till Christmas; will undoubtedly be a standard of value in this latitude.

Brighton improves year by year, many bunches attaining a great size, and finely shouldered; to obtain large bunches requires checking in growth; is not a heavy cropper or good keeper, ripens here with Delaware.

Dempsey's No. 5, a production of your esteemed President, Ontario Fruit Growers' Association, has fruited for

two years, proves to be the earliest of its colour, resembling Massasoit in some respects, but earlier.

Owasso proves very productive and satisfactory in quality, with fine large clusters of medium berry with a pleasing bloom; ripens with Delaware.

NEW GRAPES.

The following new varieties not yet disseminated by their originators are worthy of reference. Burr's Early, by the venerable originator of Early Victor, who writes of it, "larger than Victor, very prolific but not quite as hardy; the fruit has a more refined, delicate and richer flavor; if it does as well with you as Victor, you have a real treasure."

Norwood, by the Rev. J. W. Talbot, of Mass., took a first-class certificate before the Mass. Hort. Society, "ripens a trifle earlier than Concord, and has kept with me in good condition till April;" its originator writes: Rommel's Delaware Seedlings, "Early Black" and "Rommel's July" promise to give us extra early grapes, said to possess other merits.

Ulster Prolific, of A. J. Caywood & Son, who kindly supplied our recent exhibitions with its fruit, of excellent quality.

Jessica is exceedingly vigorous, and I have heard it highly spoken of by a member of our Montreal Hort. Society, who has fruited it.

Rickett's Hybrids, Empire State, Golden Gem, Peabody, Nos. 72, 346 and 543 have done exceedingly well.

Great acquisitions, in recent years, have undoubtedly been added to our grape list, and the cry is "still they come;" the present year offers new candidates for favor, which, if half their claims, put forth by their originators prove to be based on fact, we have a glowing future before us.

W. M. P.

Clarenceville, Que., Jan. 16, 1884.

BAXTER'S RED APPLE.

TO THE EDITOR OF THE CANADIAN HORTICULTURIST.

DEAR SIR.—This apple is said to be a native of Brockville: this I believe is not correct. A German by the name of La Rue immigrated to this country from the State of New Jersey, U. S., about one hundred years ago. He settled on a farm near Brockville, and brought a young tree of this variety with him and planted it on his farm. I am told the tree is still growing on this farm bearing large crops of apples. A good many years ago La Rue used to carry these apples to Brockville in a basket, and retailed them out at five cents a piece. Baxter was the first man that cut scions from this tree and commenced to propagate it. It was afterwards propagated in the Lyn Nursery and called the Baxter. Mr. Daniel Nicol, proprietor of the Kingston Nurseries, Cataraqui P.O., Ont., has been propagating this tree quite extensively for some years. He calls it La Rue. Mr. Geo. Leslie, Toronto Nurseries, calls the same apple Baxter Red. I got my information about this tree from Mr. John Buck, Alexandra Bay, he is a nephew of La Rue. Mr. Buck told me that a gentleman from New Jersey was at his place a few years ago and saw the trees growing in his orchard and recognized them at once, and said that they were extensively grown in that state at the present day, and was one of the best apples they had. He gave him the name of the apple, but he, Mr. Buck, had forgotten it, consequently he could not give it to me. This tree has been quite extensively planted in the vicinity of Kingston and Brockville, and has given the best of satisfaction. It is extremely hardy, and the coldest winters

that we have here never affect it in the least. It is an upright grower, very thrifty and the trunks of the trees are all as straight as a gun barrel. It commences to bear very young, fruit growing on the ends of the shoots when young, when the tree gets older fruit grows on fruit spurs and on the ends of the shoots. Tree requires little or no pruning, it only sends out sufficient limbs to form a good shaped tree, a little hard to propagate on that account. The fruit is very large, red, covered all over with white dots, generally keeps good until spring. You will see by what I have written that this tree is known in Canada by three names and not one of them the right name of the apple. I have given you a description of the tree and the apple, it is also described on page 92 in the report of the F. G. A., 1881. Mention is made of the same apple in the report for 1882, page 83. My object in writing this article is to find out if possible the right name of this apple, probably you or some of the readers of the *Horticulturist*, by the description given of it, can give its right name. It seems to me ridiculous that such a fine apple and tree so adapted to our climate should be known by so many names and untruthfulness about its origin and its names. I have 40 trees of this variety, 28 were planted in 1876, raised in the Lyn Nursery; there was a lot of trees sold here that year from that nursery as bankrupt stock, and in 1878 I planted 12 more trees I got from Mr. Nicol; not one of the trees has died from any cause, they are fine trees, some of them over twelve feet high; the trees were three years old when planted. I have had some fruit from these trees every year, commencing the same year they were planted.

Yours truly,

A. BRIDGE, P.M.

West Brook P. O.

HOW TO PREVENT MICE FROM GIRDLING TREES.

DEAR SIR,—I read somewhere that the effectual way to prevent mice girdling apple trees was to trample the snow round about them. I did so three different times, immediately after heavy falls of snow, and in spite of it have had about a dozen trees more or less injured by the mice. However, none are entirely girdled. In one or two places the mice had operated on the top of the trampled snow, which was covered with chips of the bark, and here and there the dirt of the little animals was to be seen.

I am now trying another plan which is effectual. Small tubes of stove-pipe iron, a bit about a foot or so long, and from six to nine inches wide, according to the size of the tree, is curled into a tubular shape; open the side wide enough to let the stem of the tree pass in, close it again till the edges meet or nearly so, and enter the lower end into the soil at the root of the tree. Then replace as much snow as you like short of the top of the tube, and the mice wont give any further trouble as far as that tree is concerned. These tubes can easily be removed in the spring and put by for use next winter.

The plan has been tried before with perfect success. The cost is from two to three cents per tree. It is far better to do this than to renew a portion of the trees every spring, when you have not only loss of money but of a year of time.

I was sorry to see that a committee of Horticulturists had decided against the English sparrow. It is the only bird that eats caterpillars, especially those of the white butterfly, which devour the common cabbage so much. However, in this country it seems to confine itself pretty much to towns and their immediate vicinity, and I don't think that the sparrow would become sufficiently numerous in the open coun-

try to do much harm. Sparrows are pretty numerous at Milton, a mile and a half from my place, but only once or twice during the summer have I seen or heard a sparrow here.

The red-headed w. oil-pecker, on the other hand, is a really destructive bird, but as it only carries away one cherry at a time, the loss is not severe. The robin (*turdus migratorius*) I encourage, and in return for its very pleasant song and the quantities of insects, grubs and worms it destroys, it is welcome to all the fruit it likes to take. But I forgot worms are necessary as natural drainers of the soil.

Yours truly,

W. E. BROOKS.

FERNS.

No one possessed of the slightest degree of taste for gracefulness and beauty can help admiring the variety and grace of even the commonest of our native ferns, which are to be found in abundance in almost any piece of low or mucky woodland in our Province. They are invariably found in shady nooks where almost nothing else will grow, but where they have abundant air and some sunlight as well as moisture.

In almost all gardens we have just such spots as our native ferns would flourish in, or spots which could be adapted to them without much trouble or expense. Indeed we often find spots in gardens too shady for any of our cultivated shrubs or plants and which on this account are left bare, neglected and unsightly, which with very little trouble could be utilized as ferneries, or by throwing a rockery roughly together, filled in with mucky, mossy soil, the various varieties of ferns can be planted in the crevices so as display all to advantage, and thus possibly turn a spot of our garden that otherwise may have been unsightly into a thing of beauty. Many rockeries are built with such care as to symmetry that the beauty is actu-

ally destroyed to a great extent. There should in my opinion be a certain carelessness in building or *throwing* (I like that word for a rockery) it together. The soil used should be a mossy or turf loam inclining to peat, especially for the large varieties, and here and there in nooks between rocks some finer soil may be mixed in for the finer sorts.

The ferns should be transplanted from the woods in spring just as they show signs of growth, and it is easy in doing so to take up a considerable quantity of soil with each plant. In order to retain a surface moisture in the fernery a good mulch should be spread over the bed, and in hot dry weather a liberal sprinkling of water should be frequently applied.

In winter the ferns should be covered, and nature dictates leaves as a fitting mulch, although when not handy something else will suit.

Let us experiment then on the different kinds of ferns, and report progress in the *Horticulturist* as to the success or otherwise of our several ferneries.

ALEX. MCD. ALLAN.

Goderich Feb. 7th 1884.

THE NIAGARA GRAPE.

Like others, I was astonished to observe the *Wine and Fruit Growers'* severe criticism of this new white grape, but when I discovered the reason for this onslaught to be the fact that the proprietor of that journal was disappointed in his desire to control the "Niagara" for a district where I presume he thought he could make his pile out of it, his criticism falls to the ground, and his journal has gone down below zero in my esteem. I have a Niagara vine which certainly fully sustains the reputation claimed for it as one of the strongest growers in the grape family. I expect to fruit it next season, when the results shall be given to the public.

ALEX. MCD. ALLAN.

A FEW NOTES FROM MUSKOKA.

In the spring of 1873 I received a lot of young fruit trees from England, they were a few from a few thousand I myself raised from seed and grafted with various well-known sorts. They arrived in good condition, and nearly all grew. Some of the varieties were Mank's Codlin, Keswick Codlin, Wellington or Dumelons seedling, French Crab Margil, Royal Russet, Court Pendu Plat, Rennet du Canada, Alfriston and Cellini; of pears Marias and Louise Bonne and a few quinces, and of plums, Golden Drop, Victoria, Prince Englebert, Prince of Wales, Jefferson, Pond's Seedling, R. Claude de Bavay, Belle de Septembre and Bullace. Now the result! It is dreadful to tell what effect the climate of Muskoka had on them; why it killed some right out the first winter, others it slowly murdered, but there were a few hardy fellows that defied it, and you will be anxious to know which they were. *Cellini*, he is a bold fellow and does well and bears well; a large showy heavy apple, splendid cooker, it is a fall apple. The other variety is Wellington or Dumelons Seedling, the only one left, it is not hardy enough for here. Though this one gives good crops every other year, it keeps well, and is a sharp, acid apple, good cooker. All the other varieties are dead, including the pears and plums, except one solitary Pond's Seedling that never bore a plum. So I have no plums only the wild native of this country. In 1872 I started to raise some apples from seed, English seed. I selected a few that looked promising, and four of these chance seedlings fruited and some others blossomed. The first fruited in 1882, it bore fifty-three fine, showy, middle sized apples with long slender stalks, they looked so good and attractive on the tree that I at once named it *Hassants Admirable*. I was keeping them to prove their keep-

ing qualities, but unfortunately they got frozen. I have since moved the tree to a better position. The next bore six apples much like the Court Pendu Plat in shape and colouring, only smaller, the next had two apples, so in time I shall have a variety, I hope some will turn out good keepers, that is what we want here.

I have procured several varieties of crabs, but there is one of the crabs that appears not to be so hardy as the rest; that is Quaker Beauty, it is a fast grower, but it has not fruited yet with me. I got it as I am informed it will keep long into May, for all the other crabs are obliged to be used as soon as ripe. Duchess of Oldenburg not fruited yet but grows well. Cannot say much as to Astracan and Alexander. I fear them rather by their appearance.

I have raised Strawberries and Raspberries, and Currants from English seed, the strawberries did not please me and the raspberries were fine but they cannot stand the winters, there are a few that now stand in a neglected fence corner that struggle through and bear a few fine berries, but I have no time to bother with things like them that take so much trouble. Of currants, I have raised and am raising from seed a fine variety of black (I have named them *Zulu*) currants. I forgot to mention something about the snow, the snow here is deep and a great protection for all that are below its level, but it has often destroyed my hopes as it gives and freezes on and off in the spring forming ice and breaking many and many a young tree and even large branches of established trees, if they are not above deep snow line, and this is why I prefer to have a clear stem high enough to be just above deep snow line.

I shall be able to give you other notes some future time.

I was conversing not long ago with a fruit cultivator and it was his opinion that it was not altogether the hard winter's frost that damaged the fruit trees here in the north so much, as that the ground here seldom freezes hard on account of the heavy snows, causing the sap to start too early and thereby get a severe check. Perhaps some more experienced will give their opinion.

Medora, Muskoka.

T. A. H.

REPORT ON TREES RECEIVED FROM THE FRUIT GROWERS' ASSOCIATION.

The Grimes Golden apple tree sent out by the F. G. A. is a fine tree now, it is the picture of health; it is perfectly hardy and stands the winters well. It commenced to bear four years ago, and has borne every year since; but the entire crop every year is destroyed by the codlin moth. The last season it was well loaded with fruit, but I could not find an apple that had not a worm in it. In fact every variety that I have, except the Golden Russets, for the last two seasons has not been worth gathering on account of the black scab and the ravages of the codlin moth. I visited some other orchards in this vicinity last fall and found them nearly as bad as mine, although there are some exceptions. Mr. John Simpson, at Cataragui, had a good crop of apples which appeared to be quite free of black scab. Unless something checks this disease, the apple crop is done for in this section of the country. The borers are troublesome. I go over my trees three times every season and get them out before they get far into the tree; the wounds made are very small and they soon heal over. I have never used any preventives, but I intend to try some remedies. A neighbour of mine uses pine tar; he applies it with a paint brush. He removes about an inch of earth from the tree and brushes the tar up on the trunk

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a foot from the ground, and puts the earth back again. He says that one application on young trees with smooth bark will last for four or five years. He says that it will spread as the tree grows and will not wash off; he has been using this remedy for a number of years, and tells me that he has had no trouble with borers since he has used it. I sold a hundred trees to a man last spring that had faith in this remedy, and he put a coat of tar on them before he planted them.

The two pear trees, Clapp's Favorite and Flemish Beauty, sent out by the F. G. A. some years ago are growing fine. They are very hardy, the coldest winters here have not injured them. This winter is being a severe one, and I was looking over my pear trees to-day, February 8th, and I find these two all right, and the other varieties winter-killed. I can tell the trees that are killed by shaving off a piece of bark from the young shoots; if the wood looks fresh and green it is all right, if it is black it is winter killed. I have some pear trees at this date black as ink under the outside bark, they will never sprout a bud next spring.

Some people think the killing is done in the spring, but I am satisfied it is the hard freezing that does the mischief. Ever since I have had fruit trees I have made a practice of examining them the last of this month, and if they have not turned black under the bark they are sure to leaf out in the spring. The two pear trees above mentioned have borne no fruit yet, although they have been in full bloom every spring for three years; I am living in hopes that they will bear when they get older. I am at a loss to know the reason that fruit trees and bushes will blossom year after year and not bear fruit. I had as fine a lot of black Naples currant bushes as could be found anywhere, and they blossomed profusely every year for ten

years and bore no fruit, except a few scattered berries here and there. At the end of ten years I dug them up and threw them away, leaving one bush only to see if it would ever bear. Last year that one bush bore a good crop of berries. The first year that Mr. Leslie advertised Lee's Prolific, I remitted him fifty cents for one of that variety; it acted the same as the other, in fact I could see no difference in the two varieties, and came to the conclusion that they were the same kind that I already had. I had a lot of an English variety of gooseberries that acted the same as the currants. I bore with their conduct for seven years and then dug them all up and threw them away; at the same time the Downing Gooseberry was bearing large crops of berries every year on the same ground. I would say here that the Downing is giving the best of satisfaction in this vicinity. My bush, received from the Fruit Growers' Association, some eight or ten years ago, has never missed bearing a good crop any year. I have raised quite a number of bushes from it. Some I planted, some I sold, and some I gave away. The Burnet Grape will bear no fruit for me. It is growing on the same ground with other varieties that bear every year. I have laid it on the ground every winter, and covered it with cornstalks. I have covered it with earth this winter. I have two varieties of grapes, one called the Caroline and the other the Chippawa. They are the earliest grapes that I have ever seen. They have ripened with me two seasons in succession on the 20th of August, and I have seen some whole bunches ripe on the 10th of August. Last year they did not ripen until September 2nd. They will remain on the trellis all winter, but will bear better when laid down. The snow is the only covering they ever get. They grow from eight to twelve feet every season,

on stiff, hard clay, without manure or cultivation. Of course they are only a common wine grape, not much better than the Clinton. The two varieties resemble each other very much, but there is difference enough to see that they are two distinct varieties.

Yours truly,

West Brook.

A. BRIDGE, P. M.

STRAWBERRY CULTURE.

My experience with strawberries is that many different sorts require different treatment to obtain the best crop. For instance, the Wilson is not profitable with me now; if grown in the matted row system.

My mode of growing the bulk of Wilson, the last three years, is to get a sharp spade, go to an old slashing, the roadside will do if the sod is rich; cut sods four or five inches square, I make use of them the same as pots for pot grown plants. I plant early in August, pinch off the runners and cultivate.

As soon as the crop is off turn the sod upside down. One may plant on it late potatoes. Between the rows of these, strawberries may be again set in Autumn and treated as before.

I grow the Crescent on the matted row system, it is the cheap way as to labor. The Crescent is vigorous, healthy thus far exempt from mildew on its foliage; will flourish where the Wilson will starve, two years crop taken.

The Sharpless is the Jumbo of strawberries. The plant is subject to one serious criticism, it does not give its best yield until the second year. I grow on the row system. If set out in Spring let no runners grow for two or three weeks; if the plant is bushy let two or three runners grow from each plant. If pot grown plants are set out in August pinch off all the runners. Second year I cultivate, when they are allowed to run. Two years crop taken. One may have two strings to his bow.

With me a favorite plan has been to plant late in September by taking them up with a ball of earth around the roots.

There is one little secret conducive to success, especially in a dry time, leave four or five inches of runner attached to each side of the plant, bend these down and bury with the roots; just before winters freeze up, cover each plant with a hoeful of earth; next April, late, scratch off this earth.

GEORGE SUTHERLAND.

VALUABLE SUGGESTIONS.

It gives me pleasure to testify to the increasing interest and value of the *Horticulturist*. It is of special value I think, as giving the only reliable, *original* matter suited to our peculiar climate and circumstances that I at least am able to obtain, and I would suggest the encouragement of correspondence and questions for the better development of this feature, and the giving of experience, especially when failures have followed and the reasons can be given; such experience if authentic usually conveys a lesson.

Peterborough.

G. M. ROGER.

THE GROSBEAK.

DEAR SIR,—It will be interesting to know if the Grosbeak (*Coccothraustes ludoviciana*), has made its appearance in any part of Ontario this winter. I have only observed two very fine specimens so far, this season, feeding on the berries of the Mountain Ash; but last winter a very large flock of them settled down in our immediate neighbourhood, and did very considerable damage to the buds of our peach and cherry trees; they stripped the latter so completely that we had not a pint of cherries from three or four good-sized trees, though they were very full of buds, and the tops of our peach trees were covered with dead wood, so

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thoroughly had they, with their powerful beaks, sheared off leaf and fruit buds alike. The hardiness of the bird seems truly wonderful; during the fiercest blizzard I have observed them eating the beech buds in some sheltered hollow.

Yours truly,

JAMES BISSELL.

Theford.

APPLES FOR THE COLD NORTH.

The following letter was written by Mr. Chas. Gibb, of Abbotsford, Que., to the Deputy Minister of Agriculture for Manitoba, but the information given is equally valuable to our readers who reside in the colder parts of Ontario:—

DEAR SIR,—When passing through Minnesota in August last, I tried to gather some facts which might throw light upon the question of apple growing in Manitoba. The experience of Minnesota is the most valuable that can be had, the truest guide to experimental work in our North-west.

Minnesota's largest experimenter in producing new varieties from seed, is Mr. Peter M. Gideon, of Excelsior, about twenty-five miles west of St. Paul. It was he who originated the Wealthy.

I asked Mr. Gideon what five varieties he would select for planting in Manitoba—in fact, what are the hardiest trees he knew of. After some debate he answered:

Martha, from one-half larger to double size of Transcendant, better for cooking, season October and November.

Florence, a pink striped fruit of fair quality, better than Transcendant, season Sept. 1 to 30.

September, from seed of cherry crab, size of medium sized apple, of good quality.

October, also from seed of cherry crab, pretty, size of September, sub-acid, not astringent, and very productive.

These four varieties he considers the hardiest he knows of except the cherry crab, and considers them all ahead of the Transcendant in hardiness and quality,

and hardier than the Red Siberian. I must add that these varieties have had only a limited trial, and that mainly in Mr. Gideon's own grounds.

Mr. E. S. Spaulding, of Minneapolis, an old propagator, suggests for trial Florence, Martha, Duchess, Wealthy and Tetofsky. Transcendant crab he would add certainly if likely to be free from blight. Blight is a serious trouble, especially with crabs, in Minnesota. We hardly know what it is at Abbotsford. The cause is a mystery, yet several in Minnesota associated it with the intense summer heat, which is not likely to be the case in Manitoba. Of the Hybrid crabs, Mr. Spaulding finds Meeder's Winter not hardy. It is a fine qualified little crab which I would have supposed extra hardy. Early Strawberry (a very early crab of fine quality) he finds hardy on clay soil—not on black soils. Orange (a thin-skinned, sub-acid crab of good quality) fairly hardy but a little apt to blight. General Grant (a medium sized apple of only fair quality, but a most profuse bearer,) Mr. Spaulding considers the hardiest, though the worst for blight.

Mr. A. W. Latham, of Excelsior, would recommend Transcendant, Whitney's No. 20, and Virginia Crab. The Tetofsky he considers not hardy enough.

Whitney's No. 20 Crab is a little apple of really good quality, which I am very glad indeed to see proving so hardy at the north. Virginia Crab I find various opinions of. Mr. Peter Gideon says of it: "as hardy as Transcendant, and the same size; hardly equal in quality, but keeps later." Some say not as productive; others say hardy, but not valuable.

Another Minneapolis opinion, I think that of Mr. Wynnan Elliott, gave Transcendant, Hyslop, Tetofsky, Whitney's No. 20, Large Red and Yellow Siberian and Virginia.

Mr. Oliver Gibbs, of Lake City, Secretary of the Minnesota State Horticultural Society, suggests Transcendant, Early Strawberry, Virginia and Beeches Sweet. Also, Whitney's No. 20 for trial. Beeches Sweet he finds the hardiest of the hybrids.

It is a sweet crab of good size and good quality.

Mr. J. M. Underwood, also of Lake City, says all kinds injure at times, but suggests Transcendant, Beeches Sweet, Early Strawberry, Whitney's No 20, and Orange.

Mr. A. W. Sias, Rochester, Minn., President of the Minnesota State Horticultural Society, suggests for trial, Duchess, Tetofsky (a few), and would risk Red and Yellow Anis, and Russian Green and White Pigeon. He does not mention any early crabs, because he believes these Russians equally hardy, harder he thinks than Quaker Beauty Crab or Whitney's No. 20.

Mr. Sias has experimented largely with the Russian apples imported by the Department of Agriculture at Washington, in 1870. His yellow Anis is a medium sized apple of pretty good quality, somewhat red in color, and though hard and crude when I saw it, does not keep with Mr. Sias later than beginning of October. This is No. 987 of the Department of Agriculture Catalogue. Red Anis, No. 985, is much like it, possibly a little more red, and much like Skeischappel No. 413 of Mr. Underwood; scarcely the true anis rosovoi of the Vjga, but a near relative. Russian Green No. 382 is also an anis, without doubt, striped with red and of the blue Anis family. White Pigeon No. 317 is a small very conic sweet apple with a very peculiar flavor.

In Wisconsin, where the climate is somewhat milder, our friends did not like to venture an opinion. Mr. A. G. Tuttle, of Baraboo, Wisconsin, has been a very large experimenter with Russian apples, and is now planting the best of them largely into orchard. Mr. Tuttle spoke of the special hardness of the Hibernial No. 378, a large showy fall fruit of pretty good quality, and also of the Transparent family of which yellow and white Transparent, Red Duck and Charlotenthaler are members. His opinion of the special hardness of this Transparent family is also that of Peter Gideon, at Excelsior, Minn.

Mr. Pepper, of Pewaukee, Wis., suggested for trial for the rich soil of Manitoba, the slow growers like Tetofsky, Gibb, Duchess and cherry crab, and also Transcendant. These he suggested from what

he knew of them farther north. Gibb Crab, he says, is doing well so far at Crookston. It is a seedling raised by Mr. Pepper from Yellow Siberian (female) and Fall Greening (male) the best in quality I have in a collection of thirty varieties.

When at Winnipeg I stated that apple trees grown for trial there should be grown upon crab roots. In this I was wrong. The Russian Apple tree does badly when top grafted upon the crab, and especially the Transparent family. Root grafted it does better, but hardy apple roots are much to be preferred. Such is now the verdict of experimenters in Minnesota, Wisconsin and Vermont. Crab Apples, however, had better be grown when obtainable on crab roots.

A GRAND RAISIN VINEYARD ENTERPRISE.

The largest sale of land ever made in Southern California for fruit purposes has just been completed at Ontario to the San Bernardino County Raisin Company of Boston, Mass. This company, as the *Riverside Press and Horticulturist* informs us, has recently been organized with a capital stock of \$1,000,000.

The lands selected are located in a solid body on the railroad east of Ontario. The water will be piped to the highest corner of each ten-acre lot, and the company will have a steady stream of one hundred inches of water continuously flowing upon their lands night and day, or two hundred inches of day water. It is intended to plant not less than five hundred acres to vineyard this coming winter, and, if possible, a larger acreage.

This vineyard, when completed, will be the largest raisin vineyard on the coast, and probably the largest one in the world. The company is composed of wealthy men, and their endeavour will be to establish a brand for their raisins that will stand high in the markets. Already heavy raisin dealers in Boston and London have signified their desire

to handle their crop when the vineyard comes into bearing.

The raisin industry is as yet in its infancy on this coast, and the yield this season is estimated at 125,000 boxes. California raisins have been brought into competition in the eastern cities with the imported article, and have stood the test, both as regards quality and price, and that, too, at very satisfactory figures to the producer.—*Farm and Garden*.

VINES FOR WINDOWS.

I am often asked to recommend some vines for use in the house, and generally the person making the inquiry



COBEA SCANDENS.

wants something of rapid growth. If I were asked to say what vine I considered best of all, I should unhesitatingly name the English Ivy, but in many instances it grows slowly, and therefore does not meet the wants of such persons as do not like to wait for effect. One of the best rapid-growing vines I have found to be *Cobea scandens variegata*. This vine has very pretty foliage of a pale green, distinctly marked with white. It grows "like a weed," and will soon fill a window. It bears very pretty purplish blossoms of a bell shape, but its foliage is more ornamental than its flowers are.

It is much more robust and healthy

than most variegated plants are; indeed it seems to be as strong and vigorous as the Madeira vine which is about as healthy a plant as I know of, and which never gives up to anything short of a frost. This Madeira vine is excellent for screens before a window, and can be trained on strings in any desired way. It is almost as well adapted to growing in shade as the Ivy is. It is really a summer plant, but I generally grow a root or two in a pot, and I have no difficulty in keeping it in growth through the winter, by cutting it back well in fall, and giving it fresh earth. It is like the Calla in this respect; it will rest if you want it to, or it will keep on growing the year round. It has little clusters or spikes of fringed white flowers, having a pleasant fragrance and being quite attractive, but its shining, dark-green, waxy leaves are attractive enough to make it a favorite.

Pilogyne suavis is another very satisfactory climbing plant of comparatively recent introduction. It has leaves shaped something like the Ivy, but of a lighter green. It climbs strings, wires or sticks equally well, and holds itself up tenaciously by means of its many grape-like tendrils. It is a very rapid grower, and must become a general favorite as soon as its merits are known. — C. E. REXFORD, in *Farm and Garden*.

TREES WITH COLORED FOLIAGE.

BY W. C. BARRY, ROCHESTER, N. Y.

Some trees have remarkably distinct and showy foliage, and are therefore peculiarly valuable for planting singly or in groups. The purple Beech, with its rich purple leaves, is unequalled among trees of its color. Schwedler's Maple, a new variety of the Norway, with purple foliage, is a charming tree, and promises to occupy a high place among purple-leaved trees. It is perfectly hardy, healthy, and vigorous. The blood-leaved Peach has beautiful crim-

son foliage, and when making its young growth is very striking. It grows rapidly, and becomes effective very quickly. It is not, however, a long-lived tree, and should only be used where immediate effects are desired, making provision for its loss, which is likely to occur in a few years. The tricolor-leaved Sycamore is one of the handsomest of ornamental trees, its leaves being mottled and marbled with yellow. The variegation is constant and effective. The purple-leaved Sycamore is also a very interesting tree. The Golden Locust has handsome gold-tinted leaves, and may be employed in groups very effectively. Memminger's Horse Chestnut is one of the newer trees which is worthy of mention, on account of its peculiar foliage. Its leaves are, as it were, sprinkled and dotted with white, the effect of which is quite remarkable. As a single tree upon the lawn it is very attractive. The Silver-leaved Linden is a charming tree of fine habit, and with rich silvery foliage. It deserves to be better known. The variegated-leaved Bird Cherry has handsomely variegated foliage. Its branches droop, rendering it a very graceful tree. The Royal Willow, with its bright silvery leaves, is very conspicuous. In groups it is very effective. The Golden Oak, as well as the purple-leaved Oak, are both distinguished for their remarkable foliage. The hybrid Mountain Ash has very distinct greyish leaves and is a choice tree. The Aucuba-leaved Ash has handsome, variegated leaves, and is very showy. I have brought these trees with beautiful foliage together, so as to show what valuable material we possess for effective groups. If arranged judiciously and artistically, the most extraordinary result may be produced.

TREES WITH CUT OR DISSECTED FOLIAGE.

Wier's cut leaved Maple has distinct foliage, and the half-drooping habit of

the tree renders it a handsome object upon the lawn. The dissected-leaved Norway Maple is much admired for its deeply cut leaves. The cut-leaved Japan Maples are exceedingly showy and beautiful, but their slow growth and difficult propagation will always render them rare and expensive. Their hardiness is still questioned, although in our grounds they came through the past winter in good condition unprotected. I do not lay much stress upon this class of trees, preferring to draw attention to thoroughly hardy, vigorous, rapid-growing, easily-propagated trees, which can be sold at moderate prices. When the hardiness of the Japan Maple is no longer in question, and its propagation has been rendered less difficult, it will be soon enough to suggest it to the public for general planting. The imperial cut-leaved Alder and cut-leaved Weeping Birch are two elegant trees which are much esteemed for lawn planting. The cut-leaved Beech is one of those extraordinary trees which claim special attention. A proper consideration of its qualities will lead us to the conclusion that it is one of the finest trees known to cultivators. Hardy, vigorous, luxuriant, of pleasing outline and possessing delicately cut foliage, it has all the valuable characteristics that could be asked for. The Oak-leaved Mountain Ash merits the attention of planters, as it has few equals among handsome trees. Its regular and rich foliage makes it an object of much interest. The cut-leaved Oak is an interesting and beautiful tree. Other note-worthy trees are the Madian-hair Tree, Broad-leaved Beech, Oak-leaved Beech, Willow-leaved Ash, Liquidambar, Scarlet Oak, Moss Locust, Laurel-leaved Willow, Rosemary-leaved Willow, Red Fern-leaved Linden, *Ulmus superba*, and *monumentalis*; and amongst desirable drooping trees may be named Young's Weeping Birch,

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Japan Weeping Cherry, Dwarf Weeping Cherry, White-leaved Weeping Linden, Camperdown Weeping Elm, and Small-leaved Weeping Elm.

EXPERIMENTS WITH INDIAN CORN.

N. Y. AGRICULTURAL EXPERIMENT STATION,
GENEVA, N. Y., DEC. 8, 1883.

On May 16th, 135 kinds of corn were planted in the garden, with the intention of promoting the cross fertilization of the varieties in order to study the effects. The seed used was some of it selected on account of its purity; other seed was from named varieties, still other seed from varieties purposely hybridized, or presumed from their appearance or location on the ear to be hybridized; and seed which possessed peculiarities in appearance. The types represented were the three kinds of pop corns, the flint pop, the pearl pop, and the rice pop; the flints in eight-rowed and twelve-rowed varieties, and soft or Tuscarora's; the sweets in two or more types of ear, the one corresponding to the flint, another to the dent corn ear; and the dents also in two or more types, the eight-rowed with broad kernel, and another, the many rowed, with deep kernel. We also had a pod or husk corn.

Through a study of the crop from these various seeds, we are enabled to make some general conclusions, which probably are sufficient to generalize from, but which certainly apply to the case in hand.

The seed of the preceding year gives uniformity of ear; that is, a dent corn seed may produce an eight-rowed flint, or an eighteen-rowed dent, but each ear will be perfect of its kind, and will be free from kernels of other type than its own. The flint corn kernel may produce several varieties of flint corn ear, or dent corn ear, but there will be no variety in the kernel upon the ear; a dent corn seed may furnish a sweet

corn ear, and dent corn ears, but not mixed upon the cob. A pop-corn kernel may produce a sweet corn ear, of sweet corn type, a sweet corn ear of pop-corn type, or a pop-corn ear of the various types, without admixture of kernels upon the ears.

On the other hand, hybridization of the current year produces changes in the kernel, so that one ear of corn may bear kernels of various colors, and of various types, the tendency, however, being for the shape of the kernel to be governed by the type of the maize ear upon which it is found.

The appearance of various types upon an ear allow of some curious generalizations. Thus, the rice pop kernel form does not appear upon ears of other character, nor does the pearl pop kernel form appear upon the rice pop ear. The flint pop does not seem to appear upon either the rice or the pearl pop type so far as form is concerned, but its structure, however, influences. Sweet corn, however, appears upon the three types of pop-corn indiscriminately, but, on the other hand, the pop-corns do not appear upon the flint corn ears. While flint corn appears abundantly on sweet corn ears, on the other hand, sweet corn does not appear upon the flint corns. Dent corn kernels will appear upon the sweet corn whose type of ear is that of the dent ear, but not upon sweet corn whose type is that of the flint ear. The dent corn, again, does not appear upon the flint ear, but in some isolated instances the flint corn kernel may appear upon the dent ear.

The appearance of kernels of one variety upon ears of another variety, for each of the types, is of frequent and constant occurrence, except in the case of red ears. The red ears have a constancy of color which is truly remarkable: where sweet corn appears upon red pop and red dent ears the sweet corn partakes of the red color.

The practical value of these deductions consists in the guide they afford toward the improvement of the varieties of corn that we grow. For instance: by planting in adjoining hills, or better still, the mixed seed of two varieties of corn, one of which is distinguished for its length of ear and smallness of cob, and the other for the large size of its kernel, we should anticipate in many instances the transfer of the large kernel to the small ear and of the small kernel to the large ear. By selecting from the crop those ears which have length and the large kernel, we should anticipate, by a series of selections, the attaining of a new variety, in which the large kernel and length of cob would be persistent. The same remarks hold true with the dent corns. But in the matter of selections the true principle would seem to be to plant but one kernel of the desired type from an ear of the desired type, and to keep the plant from this kernel free from the influence of plants of another type, and securing the crop through self-fertilization. After the first year of this procedure, by the selection of two or more kernels of the same type from different plants, cross fertilization should be used, the crop being gradually purified by selection.

While the maize plant as a rule is not self fertilized, that is, as a general thing the pollen from one plant fertilizes the silk of another, yet in very many cases the pollen and the silk upon the same plant is synchronous, and self fertilization becomes possible, and undoubtedly is of frequent occurrence. The pollen ripens from below upward, and thus the fall of the pollen, through the successive ripening of the blooms, may last for three or four days, and there is a great variation in period of blooming as between individual plants. The silk maintains its receptivity for pollen for some little time, but for how

long a period we do not yet know from direct observation. It seems, however, true, that closely following pollination, the silk loses its transparent structure and begins to shrivel, while before pollination is effected the silk retains its succulency for several days.—E. LEWIS STURTEVANT, *Director*.

PROGRESS OF SORGHUM SUGAR MANUFACTURE.

The Champaign Sugar Works, Champaign, Ill., were the first large sorghum sugar works ever started in the United States. They ground the cane this season raised on about 1,000 acres of land, and the result is a perfect success in the way of making a first class quality of sugar that polarizes 97 degrees, and much sweeter than sugar made from cane or beet roots. For years experiments have been made to find out some way to change sorghum syrup into sugar. The attempt was unsuccessful up to last year, when the State of Illinois offered a bounty to any one who would succeed in granulating the syrup into sugar. Experiments made in the State University of Illinois, in Champaign, by Professors Weber and Scovell, succeeded in accomplishing the result. A ready sale is found for all the sugar and syrup made, and the success here will cause a large number of sugar works to be erected all over the West, for sorghum cane will grow where corn can be raised, and where farmers can make \$15 an acre in raising corn they can realize \$30 an acre in raising sorghum cane to sell to these factories.

The result of this discovery is likely to make as great a change in this country as the making of beet sugar has in Europe, where to-day two-thirds of all the sugar in the world is made. Out of a total production of three million tons, France, Belgium, and Germany produce two million tons. The sugar

cane trash called "bagasse" is carried on conductors directly from the grinding mill and dropped into the furnaces in its green, wet state. The boilers are set with the Jarvis patent furnace, and hot air is discharged directly over the fires, igniting the gases generated by the burning fuel. The intense heat made by joining the gases with hot air is said to cause the green crushed cane or bagasse to burn very well, on something the same principle as tanners burn their wet bark from the leaches.—*Scientific American*.

CULTIVATION OF THE PEACH.

The following suggestions are taken from the peach circular of J. T. Lovett, Little Silver, New Jersey :

"The peach requires a warm, dry soil that is moderately rich in fertility; but as it is a gross feeder and draws heavily upon the soil, especially of potash, nutriment should be supplied in the form of bonedust and potash. Wood ashes are excellent, as are also some of the commercial fertilizers—notably, pure ground bone. Potash should be supplied in abundance by all means, for not only is it useful in supplying the requirements of the tree but in repelling 'yellows,' the great enemy of the peach. Muriate of potash is the best form to use, applying broadcast always.

"In preparing for planting the land should be ploughed thoroughly and as deep as possible without bringing to the surface the sub-soil, following in the furrow with a Goodall or other good sub-soil plough. The trees may be planted 15 to 20 feet apart each way, according to the character of the soil—the more sandy the soil the more closely they may be planted—the usual distance being 16 or 18 feet each way. The best way to mark out the ground for planting is to furrow it with a one-horse plough both ways at the desired distance.

In planting be careful to cut off all bruised or broken roots smoothly and trim back all side branches to within a few inches of the main stem—small ones to a whip—and cut back the main stem at least one-third its length. Many, particularly at the South, prefer to have the trees head low, and to cause them to do this cut off the entire tree eighteen inches to two feet above the collar when planting.

"The first two years after planting, beets, mangels, potatoes or other hoed crops may be planted among the trees, after which time they should be given the full use of the soil; and whether the space between the trees be devoted to hoed crops while they are young or not, the soil then and in after years should be kept always as mellow and as free of weeds throughout the season as a field of corn; being careful never to disturb or injure the roots while ploughing or cultivating. A peach orchard should never be planted to grass or grain crops, as such are exceedingly detrimental to the trees.

"Although the peach is more generally neglected in pruning than any other orchard fruit, yet there is none that more liberally repays for the trouble and expense, both in the superior yield of the fruit and maintaining vigor and fruitfulness. The peach should be annually headed in to produce a sturdy tree with a round, compact head, instead of being allowed to grow into one with an open, spreading, unsymmetrical top as usually seen. In pruning always use sharp tools.

PROFESSOR BULD, of the Agricultural College, of Iowa, said the apple orchards of Iowa were not partially killed, but wholly killed, by last winter's cold. They were completely cleaned out, the Ben Davis as well as the rest. He, himself, lost 600 Ben Davis trees, which had borne several crops.

BOOK NOTICES.

CATALOGUE OF OAKLAND STUD of Percheron horses imported and bred by M. W. Dunham, Wayne, DuPage Co., Illinois.

CATALOGUE, annual, descriptive of field and garden seeds for 1884, for sale by Wm. Rennie, Toronto, grower and importer of vegetable, flower and agricultural seeds, seed potatoes and bulbs.

J. T. LOVETT, of Monmouth Nurseries, Little Silver, N. J., sends us one of the prettiest fruit catalogues that come to our table. The new and rare fruits are well illustrated and described. Sent free. See advertisement.

REPORT of the State Horticultural Association of Pennsylvania, containing the discussions and proceedings for 1883, handsomely illustrated, has been received with the compliments of Secretary Engle, to whom our thanks are due.

RURAL REGISTER and almanac by D. Landreth & Sons, Philadelphia, is a very useful book of 100 pages, sent free to purchasers of seeds. It contains a fine calendar of operations for every month, with hints as to selection of seed, sowing, marketing, etc.

MANUAL of Everything for the Garden, by Peter Henderson & Co., New York city. This is a large and very valuable manual and catalogue combined, the most complete of any published. Its comprehensiveness is wonderful and its illustrations are almost innumerable.

THE CANADIAN FARMER has recently passed into the hands of John Ferguson, Esq., M. P., and no pains, we are sure, will be spared to make it acceptable to the reading farmers of Ontario. It is a sixteen-page quarto, published weekly, at the Welland Printing House, Welland, Ont. Subscription \$1 a year.

THE GARDENER'S MONTHLY, edited by Thomas Meehan, and published by

Charles H. Marot, 814 Chestnut St., Philadelphia, is one of the most valuable horticultural publications on this continent. \$2 per annum. The number for February is full of matter interesting to every cultivator of fruits or flowers.

LANDRETH'S COMPANION for the Garden and Farm, price 10 cents; published by D. Landreth and Sons, Philadelphia. This is one of the finest works of art ever issued for the benefit of the gardener. It is replete with costly illustrations and contains a valuable kitchen-garden calendar for each month's work during the year, adapted to both Northern and Southern climates.

VICK'S FLORAL GUIDE for 1884 is an elegant book of 150 pages, three colored plates of flowers and vegetables, and more than 1,000 illustrations of the choicest flowers, plants and vegetables, and directions for growing. Send on your name and post office address, with 10 cents, to James Vick, Rochester, N. Y., and receive in return a copy of the Guide, postage paid. This is not a quarter of its cost. If you afterward order seeds, deduct the 10 cents.

THE IMPERIAL DICTIONARY of the English language is being brought out in a new edition by the Century Company, New York, who state that this important English work is offered without change in any respect. This edition has been carefully revised and greatly augmented by the English editors, so that it is now probably the most comprehensive dictionary of the English language. It is a complete encyclopædic Lexicon, literary, scientific and technological, illustrated with over 3,000 engravings. In four octavo volumes. Price, \$20 in cloth; \$25 in half Russia. The dictionary was compiled by John Ogilvie, LL.D., and the revision is edited by Charles Annandale, M.A.