

THE

CANADIAN

Horticulturist.



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Vol. 6, No. 8  
Table of Contents

JAMES VICK STRAWBERRY.  
MEETING OF THE MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.  
THE MAGOG REDSTREAK.  
TREE AGENTS.  
THE PRENTISS GRAPE.  
FRUITS IN MINNESOTA.  
CORRESPONDENCE.  
—THE WILSON STRAWBERRY.  
—GIRDLED APPLE TREES.  
—FRUIT CROP IN THE ANNAPOLIS VALLEY.  
—THE PETITE MARGUERITE.  
—ALUM WATER FOR CURRANT WORMS.  
—DANGER TO OUR SHADE TREES.  
EXPERIMENT WITH PEAS.  
DATES.  
SORGHUM.  
PREPARING FRUIT FOR MARKET.  
SEED BREEDING.  
EARLY GREENS FOR NEXT SPRING.  
LIMA BEANS AS A FARM CROP.  
SHRUBS WITH ORNAMENTAL BERRIES.  
GRAFTING THE GRAPE VINE—A NEW METHOD.  
IS FRUIT-GROWING PROFITABLE?  
WINTER PEARS.  
FRUIT CULTURE IN COLD RUSSIA.  
SNYDER BLACKBERRY—ITS PRODUCTIVENESS IN IOWA.  
RASPBERRIES IN ILLINOIS.  
EARLY APPLES FOR MARKET.  
THE BLACK KNOT ON PLUM TREES.  
A GOOD PLACE FOR FOREST TREES.  
SPARE THE TOADS.  
THE TAYLOR BLACKBERRY.  
SINGULAR FREAKS.  
BOOK NOTICES.  
MISCELLANEOUS ITEMS.  
THE CROWN O' THE YEAR.



The finest of all the new varieties. The berries are large and handsome. The most prolific known, (280 berries picked from one plant), 12 to 18 berries on one stem. W. C. Barry says: "of all the new Strawberries I have tested, this is the most productive."

"PRINTED FOR THE CANADIAN HORTICULTURIST."

THE  
**Canadian Horticulturist.**

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**VOL. 6.]**

**AUGUST, 1883.**

**[NO. 8.**

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**JAMES VICK STRAWBERRY.**

So much has been said concerning the wonderful productiveness of this new variety that we herewith present our readers with a colored illustration, which is said to be a very truthful representation, and submit for their consideration such information regarding it as we have been able to gather. Our own plantation of it is quite too young to be any test of its merits. That the plants thus far are very healthy and vigorous, is about all that can be said.

The writer received a very urgent invitation from Mr. Green to visit his grounds, where, he says, it has proved to be the most productive of all the varieties that he has in cultivation. It began to ripen with him on the 25th of June, but the fruit was all suffered to remain on the vines, and on the eleventh of July he wrote that the fruit still hangs on the vines in condition to be eaten, and that he is sure it will remain on the vines longer without loss than any other variety. This certainly is a very important quality, enabling the grower to wait a few days longer than he can with other varieties, if there should be an over supply in the market, before gathering and shipping his fruit.

As to quality, Mr. Green states that last year he thought the Manchester superior to the James Vick, but that this year the quality of the latter is far ahead of that of the Manchester. Yet he does not claim the highest quality for either of these sorts.

Mr. Green's old bed of this variety was dug over for plants, yet he says that it produced as fine and nearly as many berries as his specimen bed, and that he counted one hundred and two hundred blossoms on single plants.

Mr. J. T. Lovett says that the Vick has surpassed his expectations, and that it is of great value for market purposes.

Strawberry growers have been long looking for a variety that will excel the Wilson as a market berry, but hitherto none have been able to supplant it for that purpose. This new aspirant for fame as a market berry must be grown for many years and in many localities before its ability to rival, not to say supplant, the Wilson can be affirmed. Meanwhile growers for market would do well to give the James Vick a trial, and report their opinion of it through the columns of the *Canadian Horticulturist*.

In the *Fruit Recorder* for July we find the following mention, "James Vick yield a very heavy crop, but a large proportion of the fruit is very small, which will be against it, we fear, as a market sort; still it may do better next year."

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# MEETING OF THE MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.

*(Continued from page 150.)*

After the visit of the Society to Mr. Roundtree's plantation, the afternoon of Thursday, February 22nd, was spent in listening to papers upon the strawberry and discussion thereon. The first paper was read by the Hon. J. M. Smith, President of the Wisconsin State Horticultural Society, on Strawberries for the North, and how to grow them.

He stated that while the strawberry is the only fruit that can be grown with any certainty from the borders of the torrid to the arctic zone, it may be said that the north temperate zone is its most favored clime. And yet, notwithstanding its adaptation to so many climates and soils, it is only within the last twenty-five years that this most delicious of our small fruits has become at all common. And now it is perfectly safe to say that a hundred bushels of berries is now used at the north where one bushel was used fifty years ago. It was about 1830 that Hovey's Seedling, and afterwards the Early Scarlet, were introduced and aroused attention to the cultivation of this fruit. These were the leading varieties at the north until about 1860, when Wilson's Albany made its appearance, and by 1863 had nearly taken possession of the northern markets, and as a market berry has virtually held its own until the present time. New varieties by hundreds have been introduced, and every effort made to supersede it with something better, but none have yet succeeded. Though not in all respects a perfect berry, it is the most remarkable for the millions ever put into cultivation. It is at home in most of the south, and in the north can be grown wherever a good crop of corn or potatoes can be grown, and even in districts too far north to grow these crops with certainty.

The soil he prefers would be a light loam, rather damp than dry, have it thoroughly drained, and manure it heavily, say from twenty to forty loads of good stable manure to the acre. If he had plenty of land he would set the plants in double rows, that is, two rows of plants about twelve or fourteen inches apart each way, then leave a space of three and a half to four feet, and then set another double row, and so on until the ground was planted. He would allow the plants to fill the intermediate spaces in the double rows and about one foot wide upon each side, and keep the remainder clean with horse and cultivator. Some of the ranker growers, as the Crescent, may be set twice as far apart, and they will soon cover the allotted space.

He is satisfied that it will well repay the labor to pick off the blossoms the first season, and so keep all the strength for the development of the plant, and have it prepared to give the largest possible crop the following year.

Late in the fall, after the ground freezes, the plants should be covered with straw, or with what he likes better, marsh hay, just enough to hide them from view, and allowed to remain until the ground is done freezing in the spring. One of the greatest benefits of this covering is the protection given to the plants during the early spring, when the ground freezes, more or less, nearly every night, and thaws during the day.

After removing the winter covering, he would carefully destroy every weed and blade of grass to be found in the plantation, and then put on a heavy dressing of well rotted manure, say fifteen to twenty loads to the acre, or if to be had, fifty to seventy-five bushels of unleached ashes per acre: if leached ashes, then twice the quantity. Keep the beds free of weeds at any cost. If the crop promises to be extra large, an additional coat of manure will assist the late berries to keep up their size, and thus add very much to the value of the crop.

For some years he has not had any vines beyond reach of artificial watering, but as regards the expense that may be incurred for this purpose, each grower must decide for himself whether

the increased value of the crop will warrant the outlay. After harvesting a large crop, if the plants look exhausted and are throwing out but very few runners, he advises to plough under the plantation, as they will not pay for further cultivation. In this remark he refers to the Wilson only, never having been able to make any other variety bear itself to death the first bearing season, though he has repeatedly had the Wilson come so near it as not be worth caring for another year. If the yield has been only moderate, the second crop will probably be as good, if not better, than the first.

Such is Mr. Smith's method of cultivating the Wilson strawberry after over twenty years of experimenting, and he does not consider two hundred bushels per acre an extra crop, for he has repeatedly had much more, and sometimes double that quantity—in fact, will not cultivate for any length of time any variety that will not yield at least six thousand quarts per acre; though he must confess that he has never succeeded in getting it from any other variety, the Crescent Seedling alone excepted.

Of other varieties, he says he did his best with Jucunda, but does not believe that he ever grew a quart of them that cost less than fifty cents; Seth Boyden's No. 30, Triumph de Gand, Sharpless, and many others, are large and beautiful, but not profitable for him, while Captain Jack, Red Jacket, Prouty, and Duncan, have borne with him about one-half of what the Wilson would have done under the same circumstances.

Such has been his experience in strawberry growing, and but once in more than twenty years has he failed to have at least a paying crop, and most of the time his crops have been very profitable. These large crops have been by no means the result of chance or hap-hazard cultivation, but of very rich land, well drained, heavily manured, thoroughly cultivated, well protected during the winter, surface manured in the spring, and well watered, if dry weather came on during the bearing season. His experience has taught him this lesson, that other things being equal, the richer the land the larger the crop.

At the conclusion of the reading of Mr. Smith's paper, the President called upon Dr. H. E. McKay, of Madison, Mississippi, to read his paper on Strawberry Culture in the South, in which he stated that their largest yields and finest berries are obtained from a clay loam. As to varieties, he said that up to the present time he had found no single variety to be trusted so implicitly as the Wilson. Banish it from our lists and culture, and you remove the beacon light that guides us to the goal of success in strawberry culture. The next most valuable variety for the south is the Charles Downing.

Some discussion was had upon the subjects covered by these papers, in the course of which Mr. Hale, of Connecticut, remarked that the cutting off of the blossoms from newly planted strawberry vines was a thing *which must be done*. It is a great mistake to plant strawberries in the spring and leave them to bear what they will. Also the matter of irrigation is very important. Strawberries want water every day, all they can get, and a little more.

President Earle said that he mulched his plants in the autumn, did not wait until winter, and did not cover up the plants, but covered the vacant ground. For fertilizer he used wood ashes. The average crop in his country (Illinois), is forty or fifty bushels to the acre, though instances have been of crops running up to two hundred and fifty bushels to the acre. He considered four thousand eight hundred quarts to the acre, that is, one hundred and fifty bushels, a good crop, that with good varieties and good management ought to be secured with considerable certainty.

Mr. Evans, of Missouri, stated that a neighbor had fertilized a part of his strawberries with dried blood at the rate of four hundred pounds to the acre, and told him that for every dollar's worth of blood he received five dollars back.

The meeting then adjourned for tea.

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## THE MAGOG REDSTREAK.

An error has crept into the communication from our esteemed contributor, Mr. A. A. Wright, of Renfrew, at page 159, July number, where he has been made to say *Magog and Redstreak*, as if speaking of two distinct varieties, whereas it should read "Magog Redstreak," which is a seedling raised by Doctor Hoskins, of Vermont, and first grown on the shores of Lake Memphremagog, from whence it derives its name. Mr. Wright adds, "I thought at the beginning of the season that it was shewing signs of weakness, but with summer weather it has far surpassed my expectations in growth and apparent hardiness. In form and habit of growth it is one of the most beautiful trees on my ground."

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## TREE AGENTS.

At the June meeting of the Michigan State Horticultural Society, Professor Sattarlee, of the Agricultural College, read a paper on the "Protection of innocent purchasers of plants and trees." In the course of the discussion which followed, Professor Beal is reported in the *Michigan Farmer* to have said "that if people were cheated by the tree agents it served them right, that they deserved to be swindled by tree sellers, for they will neither attend horticultural meetings, where they could gain information which would prevent them from being swindled, nor read the horticultural papers and inform themselves." Nor is Professor Beal very far wide of the truth. Ontario has been, if it is not now, a favorite tramping ground of tree agents from over the border, just because, as they themselves put it, the people did not know enough about fruits to tell an old variety from a new one, or enough about the nature of plants to know that strawberries never grew upon trees, or that trees, whose fruit buds perished by reason of our winter's cold, could not be made hardy by grafting them on French stocks. The Fruit Growers' Association of Ontario, by means of its meetings for discussion in various parts of the Province, and by the publication of the *Canadian Horticulturist*, has been disseminating information for many years, and yet to-day, it numbers scarce three thousand members, when it should have thirty thousand. Every man who plants a tree or a currant bush in all Ontario would be benefited far more than his one dollar's worth, and be saved from being victimized by sharpers, by reading the publications of this society. When the information which would save him from the loss, and what is as hard to bear, the chagrin of being made the dupe of some sharp dealer, can be had at the cheap cost of one dollar a year, there is much soundness in the verdict of Professor Beal upon the man who is cheated, "Served him right."

The writer remembers an incident in point. At a meeting of our Fruit Growers' Association at Galt, some years ago, a gentleman brought in some samples of a strawberry which a dealer was introducing in that neighborhood as a new and very valuable variety, and was selling the plants at correspondingly high prices. The fruit was at once recognized by members present as an old and well known variety, plants of which could be readily procured at less than half the price asked for them by this enterprising introducer of old fruits under new names.

Truly, more than half the cheating would be stopped, if planters would use the means so freely and cheaply put within their reach of informing themselves, and if they will not do this, have they reason to blame any one but themselves if they suffer by reason of their own ignorance?

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## THE PRENTISS GRAPE.

Mr. T. C. Robinson, of Owen Sound, writes to the *Canadian Farmer* that he has been slow to realize the value of this grape; that after growing it for two years and having eaten the fruit, and noticed its fine, clear color, good size of berry and bunch, compact cluster, and delicious flavor, with no trace of foxiness, or acidity in pulp or skin, he fairly surrenders to its charms, especially in view of its native origin and healthiness and vigor, as vouched for by so many and exhibited on his own grounds. He found the largest berries to measure three-quarters of an inch in the longest diameter, the average running at five-eighths or over. He adds a word of caution to those who live in a climate so cool that the Concord sometimes fails to color, and generally does not get its flavor even when it turns black, intimating that in such localities the Prentiss cannot be confidently recommended.

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## FRUITS IN MINNESOTA.

A correspondent of the *Fruit Recorder* who resides at Dover Centre, Minnesota, writes to that paper, that the winters of 1877 and 1880 were too severe for the Haas, Walbridge, Fameuse and Red Astrachan, but the Duchess of Oldenburg, Wealthy, and a few others came through all right.

Nearly all the Crabs have stood the winters bravely and given plenty of fruit. Grape vines that have been protected during winter do well and bear abundantly, but neglected vines are mostly killed to the ground. The best method of protection is to cover with earth, but straw, hay, or any other good covering will answer. In raspberries Mammoth Cluster, Turner, Highland Hardy and Brandywine did well, and Philadelphia and Purple Cane gave an immense crop, although the mercury fell several times to forty degrees below zero, and once to forty-six below. Of blackberries the Snyder, Taylor's Prolific and Stone's Hardy all stood the winter well, but Kittatinny was somewhat injured. His way of protecting raspberries is to put down scraggy sticks here and there through the rows before the ground freezes, and in early winter throw a little straw on the rows. The sticks hold up the straw so that the canes are not injured.

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## CORRESPONDENCE.

## THE WILSON STRAWBERRY.

MR. EDITOR,—After trying a number of varieties, I have given up all but the Wilson. Last year I picked sixty baskets from one rod square of Wilson's in my garden. They are now just beginning to ripen for this year and promise a splendid yield. I planted the rod two years in April, kept them in rows about two feet from centre to centre, with a space of twelve to fifteen inches between. In April, a year ago, I laid slabs on the flat side between the rows.

Yours, &c.,  
J. B. AYLSWORTH.

Collingwood, June, 1883.

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## GIRDLED APPLE TREES.

I see in a late *Horticulturist* that a great many apple trees were lost by girdling with mice last winter. Now, there is not a tree need be lost by that as the cure is simple and easy. As soon as you discover the tree in spring take grafting wax and cover the bare wood all over to exclude the air. I then wrap a newspaper all round the wax (the paper may be omitted); I then bank up the whole with earth, and the cure is complete; not one will die if properly done. I remember many years ago I had three trees split in the bark, and the bark raised entirely from the trees for eight or ten inches, and the wood quite dark and begun to decay. They were four or five inches in diameter. I thought they were certainly past redemption, so I dug up four peach trees and planted them instead of the four apple trees. I then got an axe and was about to cut the apple trees down when my wife came by chance and asked me what I was doing. I told her, and she asked if I could not cure them. I said I thought it was impossible. She asked if I would let her try them. I said I would, but she might save her trouble. She got them all fixed and banked up as she had seen me do. They budded out and remained green all summer, but made no progress until next spring. I did not expect them to bud, but they did, and have borne heavy crops ever since. The peach trees are still standing among them. We have great crops of peaches and plums, but few apples.

WILLIAM BROWN.

Annan, July 12, 1883.

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## FRUIT CROP IN THE ANNAPOLIS VALLEY.

The fruit crop here will be very light, some few kinds excepted. The King of Tompkins County apple has set its fruit better than most varieties. I was much pleased with

MOORE'S ARCTIC PLUM

tree shewn to me a few days since in this valley. They had been planted three years, and such fruiting I have never seen before. The fruit is much thicker on the branches than as represented in the many plates or pictures of it that have been shewn to me. Also as to its being an annual bearer, I am informed by the owner that last season he had quite a quantity of fruit, but this season he has already had to brace up the limbs to keep them from breaking down. Also while many other kinds are full of disease and curculio stings, Moore's Arctic is completely free. There is no doubt in my mind but that it will be largely planted by orchardists.

Will some of your readers please to give a description of the apple known in Canada and in the United States as the Nonpareil?

Yours, &c.,  
*John Savage.*

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NOTE BY THE EDITOR.—Downing thus describes "Nonpareil": An old English variety. Tree, free upright grower, productive. Fruit medium, roundish conical, yellowish green, with patches

of dull russet, and red in the sun. Flesh crisp, juicy, vinous, aromatic, mild acid. Good—December, March.

Besides this there are the American Nonpareil, Braddick's Nonpareil, Early Nonpareil, Fair's Nonpareil, Fleet's Nonpareil, Foote's Nonpareil, French Nonpareil, Golden Nonpareil, Lodgemore Nonpareil, Lindley's Nonpareil, Martin Nonpareil, Ohio Nonpareil, Petworth Nonpareil, Pitmaston Nonpareil, Scarlet Nonpareil, Ross Nonpareil, Sweeney Nonpareil, White Nonpareil, and yet more, so that it may be somewhat difficult to say just which one is the one that our esteemed correspondent wishes to have described.

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## THE PETITE MARGUERITE.

TO THE EDITOR OF THE HORTICULTURIST.

DEAR SIR,—Allow me to say a word in favor of this excellent pear. In the spring of 1881 I planted two trees of the Petite Marguerite. During the season of 1882 they set more fruit than I thought good for young trees, so I thinned them to about two dozen on each tree, which ripened nicely about the 1st of October. The fruit was of first quality, rich, juicy and vinous, and just the right size for dessert fruit, while the tree is a vigorous upright grower. This year both trees are again loaded with beautiful fruit. While the Lawrence, Bartlett, Clapp's Favorite and Duchess d'Angouleme planted at the same time are still without any show of fruit.

I should like to know the experience of some others of your readers, and should their experience prove to be similar to mine I am inclined to think the Petite Marguerite may prove a profitable market pear as well as for home use. Of course it will take time to prove whether it is more or less liable to blight than other pears. But for vigorous growth, early and regular bearing, and quality of fruit, and hardiness for this section, I think there need be no doubt.

### THE BURNET GRAPE AGAIN.

I wrote you in November last my unfortunate experience in trying to grow this excellent grape. This spring I placed glass over four of the vines; they have grown vigorously and bloomed so that one week ago I had the fond hope that by September I should have some ripe fruit. But I am again doomed to disappointment. The bloom had only disappeared a day or two when the embryo fruit also dropped off. I apprehend the flower of the Burnet is not perfect, and that there should have been a vine having a perfect flower in the vinery with the Burnet. If this is not the cause of failure, perhaps Mr. Editor you can throw some light upon the subject.

The Burnet vines that are in the open ground promise to bloom well this year, and in a short time I shall be able to report whether they set their fruit more satisfactory than in former years in this particular locality.

Yours, &c.,

D. REESOR.

Rosedale, Toronto, July 1st, 1883.

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## ALUM WATER FOR CURRANT WORMS.

MR. EDITOR,—Will Mr. Webber be kind enough to inform your readers how he applies the

alum water, and how strong he makes the solution? While many object to the use of hellebore in any way whatever, there could be no reason for objection to the use of alum water.

JOHN SAVAGE.

Windsor, N. S.

## DANGER TO OUR SHADE TREES.

During the past few days evidence has been accumulating of the rapid increase of an injurious insect which promises to become a serious injury to the maple trees on our streets. Just now on the trunks of many of these trees the empty pale-brown chrysalids of this insect may be found protruding about half an inch. These chrysalids are so delicate in their texture that a touch will crush them, and if not interfered with otherwise the winds will detach them, and they will disappear within a few days.

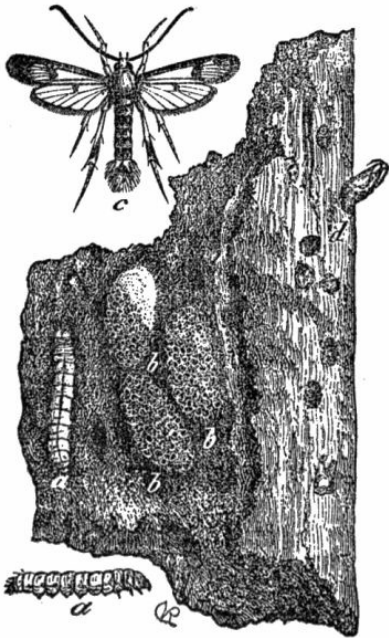
I will endeavor, in as few words as possible, to trace the life history of this insect, which, with the aid of the accompanying illustration, will easily be understood.

The perfect insect (shown at *c* in the figure) is a very pretty, clear winged moth, resembling a wasp, which, when its wings are expanded, will measure about three-quarters of an inch across. It is known to entomologists as the maple Egerian, *Egeria acerni*. The wings are transparent and decorated with bluish-black markings; the head is deep orange; the antennæ, bluish-black; the thorax yellow, and the abdomen bluish-black, banded with golden yellow, and terminating in a tuft of brilliant orange-red hairs.

The female lays her eggs on the bark of the trees chiefly affecting the soft or red maple, *Acer rubrum*, although it was occasionally found also on the other two species of maple used for street planting, namely, the sugar maple, *Acer saccharinum*, and the silver-leaved maple, *Acer dasycarpum*. In a few days small larvæ hatch from the eggs, and these at once penetrate through the bark and begin to feed upon the inner portion and sap-wood of the tree,

making an irregular burrow which is packed with the castings of the larva mixed with minute woody fragments.

When full grown it is about three-fourths of an inch long, with a small yellow head and a white or yellowish-white body, which is darker on the hinder segments. Early in the following spring, when full grown, it appears as seen at *a*. It then eats its way nearly through the bark, leaving but a very thin film unbroken, when it retires within its burrow, and, having enclosed itself within a loose silky cocoon (see *b* in the figure) changes to a brown chrysalis. A short time



before the moth is ready to escape the chrysalis works its way out of the cocoon, and, wringing itself forward, pushes against the filmy layer of bark, ruptures it, and protrudes half-way or more from the opening (as seen at *d*), when the imprisoned moth shortly ruptures the chrysalis case and escapes.

It is while in the larval state that this insect is destructive. Many of the maple trees on our streets, and some of those in the Park, are being injured, and where the insect is allowed to multiply it is likely that it will, eventually girdle the trees and kill them.

*Remedies.*—When once the larvæ are safely lodged under the bark no remedy will reach them, but the moths may be prevented from laying their eggs on the trees, or the eggs destroyed, by coating the trees with a mixture of soap and strong solution of washing soda or lye, made about the consistency of ordinary paint and applying it with a brush from the base of the tree upwards to first branches. The soap solution may be made either from soft or hard soap—if the latter, it should be warmed so as to melt it, when it will be more easily mixed with the solution of washing soda or lye.

PROMPT ACTION NECESSARY.

If this insect is to be prevented from further increase this year the remedy should be applied within a week, as the moths are now about and depositing their eggs. If delayed longer than this many of the young larvæ will probably have penetrated within the bark, where they are secure from injury.—WM. SAUNDERS, *in the London Free Press*.

## EXPERIMENT WITH PEAS.

N. Y. AGRICULTURAL EXPERIMENT STATION,  
Geneva, N. Y., July 14, 1883.

Our first planting of peas which included sixty-eight, so-called, varieties, was made April 21st. Of these the first to produce pods of edible size was Laxton's Earliest of All, which was at edible maturity June 21st. Following close behind came Kentish Invicta, Henderson's First of All, Ferry's Extra Early, Thorburn's First and Best, Ferry's First and Best, and Cleveland's First and Best, which showed pods fit for the table June 22nd. One day later came Carter's First Crop, Daniel O'Rourke, Early Alpha, Early Kent, and Sibley's First and Best, and the day following, or June 24th, the American Wonder, Blue Peter, Carter's Premium Gem, and the Philadelphia Extra Early were noted at edible size.

On May 12th we made a second planting of sixty-three so-called varieties, of which fifty-eight were duplicates of the first planted varieties.

We find that the order of the edible maturity in the varieties of the second planting does not entirely agree with the first planting. Thus, of the second planting, Carter's First Crop, Daniel O'Rourke, Laxton's Earliest of All, Early Alpha, Cleveland's First and Best, Sibley's First and Best, Hancock, and Philadelphia Extra Early were all noted at edible maturity on June 30th. On July 1st we noted American Wonder, Blue Peter, Henderson's First of All, Ferry's Extra Early, and Ferry's First and Best. Kentish Invicta was noted July 3rd.

These results are expressed in the following table:

	Planted April 21.	Planted May 12.
	Edible.	Edible.
Laxton's Earliest of All.....	June 21	June 30
Kentish Invicta.....	June 22	July 3

Henderson's First of All.....	do	July 1
Ferry's Extra Early.....	do	do
Thorburn's First and Best.....	do	
Ferry's First and Best.....	do	July 1
Cleveland's First and Best.....	do	June 30
Hancock.....	do	do
Carter's First Crop.....	June 23	do
Daniel O'Rourke.....	do	do
Early Alpha.....	do	do
Extra Early Kent.....	do	July 7
Sibley's First and Best.....	do	June 30
American Wonder.....	June 24	July 1
Blue Peter.....	do	do
Carter's Premium Gem.....	do	July 5
Philadelphia Extra Early.....	do	June 30

We note that twenty-one days earlier planting gave from six to fourteen days earliness of crop in the varieties.

Averaging the periods between planting and edible maturity the order of earliness is as follows:

Laxton's Earliest of All gave crop in fifty-five days; Cleveland's First and Best, and Hancock, in fifty-five and one-half days; Henderson's First of All, Ferry's Extra Early, Ferry's First and Best, Carter's First Crop, Daniel O'Rourke, Early Alpha, and Sibley's First and Best in fifty-six days; Philadelphia Extra Early in fifty-six and one-half days; Kentish Invicta, American Wonder, and Blue Peter, in fifty-seven days; Carter's Premium Gem in fifty-nine days, and Extra Early Kent in fifty-nine and one-half days.

To illustrate the value of selection in gathering peas for seed, we last season gathered a small quantity of the first pods that ripened of the Tom Thumb variety and a small quantity of the latest ones. We planted 100 seeds each from the earliest and latest pods, on April 21st and the same on May 12th. We note the difference in the results of the two selections of seed to date, as follows: In vegetation of the seeds there was, in the two plantings, an average difference of 14½ per cent. in favor of the earliest matured seed; in the date of blooming an average difference of three and one-half days appeared, and in the date of edible maturity an average difference of five days, all in favor of the first planting. Perhaps of more importance is the difference of productiveness of the two selections of seed. Here we can only consider the first planting. Ten plants from the earliest ripened seed have produced, to date, sixty-eight pods, of which thirty-eight are well-filled, while an equal number of plants from the latest ripened seed, have produced to date, only forty-nine pods, of which but thirteen can be called well-filled.

The Tom Thumb variety was selected for this trial because the pods are formed during a longer period than in most other varieties. It is possible that in varieties of which the pods nearly all ripen at the same time the difference in the results obtainable from the first and last ripened pods would be less marked. This experiment serves, however, to illustrate the importance of selection in gathering peas for seed, and shows that the inherent quality of the seed used may have as much bearing on the resulting crop as the condition of the soil, or the methods of cultivation employed.

E. LEWIS STURTEVANT, *Director*.

## DATES.

The date is the fruit of the *Phœnix dactylifera*. The palm date has a naked and cylindrical stem; it grows in Asia and in certain provinces in Africa, and is abundantly used by the natives.

The flowers of the date are inclosed in a long spathe and change into an oblong fleshy fruit, yellow in color, of which the thick skin is readily preserved by drying. It incloses a cylindrical, deeply furrowed nut, hard and corneous, which contains an oily and sugary substance. Each date tree carries a variable number of clusters, and these in maturity attain a length of about a meter, and a weight of ten or twelve kilogrammes. When the fruit is to be preserved, it is gathered before reaching maturity and dried in the sun. There are more than thirty varieties of dates, among which the male date, *dakkar*, or *menakker*, is pre-eminent. All these varieties have the same botanical characters, their trunks resemble the underground stems of ferns, their leaves are pinnate and luxuriant.

The palms and their congeners belong to the warm regions of the earth; they are found in India, Persia, etc. In Europe their sole representatives are the *Chamærops humilis*, and the cultivated date palm, whose fruit does not ripen naturally. The date is common in Spain, where it is cultivated upon a great scale for its fruit.

The gathering of the dates takes place in autumn, two or three times, and is over in three months. They are divided into three sorts according to their state of maturity. Exposed to the sun upon mats they become at first soft, then fill with a juicy pulp, then thicken and are no longer liable to change. The best dates come from Africa by the way of Tunis; they are as large as a finger and of an orange hue; their flesh is solid, vinous in taste, sweet, and somewhat viscous; they contain a nutritive principle helpful to horses, used on long journeys, and also useful in fattening cattle. The fruit is softened by boiling in water, and goat's milk is added. The Arabs in their pilgrimages across the desert make a species of bread from them, and use the pulp, extracted by pressure in earthenware colanders, for butter and sugar.

The fruit of the date tree contains mucilage, a gum similar to gum arabic, albumen, crystallizable sugar (cane sugar), parenchyma, pectose, citric and tartaric acids, coumarin, and water.

All parts of the date tree are used; the young branches recently cut furnish a milk which is both healthful and agreeable; this milk or sap when fermented affords an alcoholic drink named *lakhby*, or palm wine. Crushed dates with water also afford after fermentation the same decoction. Frequently the bark and fibrous portions of the young sprouts are removed to obtain the white substance within, which is eaten; the young leaves and the male flowers are also eaten when seasoned with citron juice, or arranged as a palm salad it forms a palatable dish. The Chinese use the date nuts in their writing and printing inks, and also as a dentifrice. The dried leaves are also used to make carpets and various other objects even in construction.—*Journal d'Hygiene*.

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## SORGHUM.

*Sorghum* has become to some degree a sort of by-word, for though largely cultivated in the Western and Northwestern States, and producing annually a return worth about \$8,000,000, still it has confessedly failed to do what was expected of it. Somewhere about thirty years ago the Chinese variety of the plant (the varieties are numerous) was introduced into this country, and the excitement in relation to it was not small. Its sugar producing qualities were extolled above measure; our sugar trade was to be revolutionized, so to speak; every farmer was to have a little mill, and a little kettle, and he was not only to boil out his own sugar, but to supply his less fortunate neighbors.

Some way, however, things did not seem to work right. The sugar no doubt was in the

sorghum cane, for when its juice was boiled down a sweet syrup was obtained, but there the demonstration stopped. The sugar was in the syrup, but it most persistently refused to come out of the syrup; it could not be induced to crystallize; and though the syrup had a certain degree of value, yet it was not the thing wanted, and in the disappointment the popular feeling swung round to the unjust judgment of condemning sorghum, simply because it had been the victim of ignorance and mismanagement. Recent researches however have done much toward explaining and removing the difficulties which have been in the way of successfully crystallizing the sugar from the juice of the sorghum.

Part of this has been accomplished by work in the laboratory and part by work in the field, the mill, the boiling house, etc. The report presented by a committee of the National Academy of Sciences in 1882, has just been published as a Senate document. It is entitled, "Investigation of the Scientific and Economic Relations of the Sorghum Sugar Industry, being a Report made in response, to a request from the Hon. George B. Loring, U. S. Commissioner of Agriculture." The committee consists of Prof. Bremer, of Yale, Prof. Chandler, of Columbia, Prof. Johnson, of Yale, Prof. Silliman, of Yale, Prof. Smith, of Louisville, and Dr. G. E. Moore, of New York.

The report shows clearly that essentially the two points on which success depends are maturity of the cane, and prompt correctness in working. With these, sugar from a field of sorghum can be as surely and safely expected as from a like field of sugar cane, and with perhaps fully as great a return.—*Scientific American*.

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## PREPARING FRUIT FOR MARKET.

In packing peaches, the first point should be to assort them, making as many grades as the condition of the fruit requires. When brought to the packing shed, the fruit is at once thinly spread in the shade, in order that it may cool as much as possible. In assorting, any that are at all soft are put aside, to be left at home; then two or three qualities, extras, firsts and seconds, are made, and with the best growers, the packages of each are alike all through. It is allowable to turn the colored sides of the top layer uppermost, in order that the fruit may appear at its best, but not to select large specimens for the top layer. Those who send peaches to market for the first time, will find it to their advantage to observe this rule. In packing grapes for market, the box is opened at the bottom, fine large bunches are laid in and the box filled up with smaller bunches. This is done in order that the fruit, when the top is taken off, may present a good appearance, and if the filling is done with good fruit, even if not the most select, there is no harm done. But if, as is sometimes the case, poorly-ripened fruit, and even loose berries are used to fill up, the grower will in time find that his brand is not in demand in the market. The fruit-grower, who expects to continue in the business, can not afford to pack his fruit dishonestly.—*American Agriculturist for August*.

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## SEED BREEDING.

N. Y. AGRICULTURAL EXPERIMENT STATION,

Geneva, N. Y., July 7th, 1883.

The fundamental principles of reproduction seem alike in the animal and vegetable kingdom.



In both, the mystery of life; in both, accretion through cell multiplication; in both, changes of form as arising from immediate heredity and as governed by environment. In our domesticated plants, as in our domesticated animals, we have the male and the female element of varying potency whose union is productive of the new individual. Both classes are alike influenced by the conditions described under the term, selection. We can, hence, speak of breeding the plant as legitimately as we can speak of breeding the animal. We may also use the term, pedigree, as applied to improved forms of plants, as legitimately as we can use the term, pedigree, as applied to the improved forms of animals. As in our domesticated animals, improvement is brought about through that systematic mating and selection which constitutes pedigree, so the same system in our domesticated plants will avail to produce an improvement which may be described in the same terms. If a pedigreed animal is superior in value on account of the conditions which allow this term to apply, then a pedigreed plant must necessarily possess superior value over the plant which has been developed only through unsystematic effort. As the recognition of the value of systematic effort in improvement has differentiated the pursuit of animal breeding and has constituted a class of men called breeders, so seed-growers should be likewise differentiated into a class called seed-breeders. Seed-breeding is already beginning to be, and soon must become of importance as a farm or garden pursuit.

In gardening we have many illustrations of seed-breeding in the production of new forms of vegetables secured through hybridization and careful selection, as also in the system called "rogueing," which consists in the removal from plants designed for seed purposes of all the plants which are untrue to the form desired. In agriculture we have fewer illustrations, and the farmer has applied less discrimination to his field produce than the gardener has to his small, but more intensively cultivated garden. We have, however, a few illustrations in agriculture of what may be accomplished through the selection of seed under that uniformity of idea which is described as seed-breeding. In 1857 Major Hallet, of Brighton, England, commenced his experiments on wheat, selecting his seed from the quality of the plant produced, his standard embracing hardiness, trueness to type, quality of sample, productiveness, power of tillering, stiffness and toughness of straw, and earliness of ripening. The results obtained may be expressed in the following table:

<i>Grains in original ear.</i>	<i>Kind of wheat.</i>			<i>Grains in improved ear.</i>	
45	Original red,	commenced	in	1857	123
60	Hunter's	"	"	1861	124
	White,				
60	Victoria White,	"	"	1862	114
32	Golden Drop,	"	"	1864	96

We have here an illustration of what has been obtained in the effort to increase the prolificacy of the plant, and this gain in prolificacy has also been attended by a gain in the size of the kernels. The amount of crop raised, or prolificacy of the plant under circumstances of field seeding also, if reports are to be trusted, offer parallel results; the increase of yield by the use of Hallet's seed in various countries of the world, being reported as between two and three times the average crop from other varieties.

In the case of the Waushakum corn, the selection being made by castrating the barren stalks for two years in succession, the seed saved being not from the most prolific stalks that were left, but merely of the perfect ears, raised the average crop from about 45 bushels to about 80 bushels to the acre.

Although the Station has not as yet had time to do much work in this direction, yet a beginning has been already made. On account of the importance of these facts relating to seed, we are disposed to quote the conclusions gained by Major Hallet which read as follows:

1. Every fully developed plant of a cereal presents an ear superior in productive power to any of the rest on that plant.
2. Every such plant contains one grain which, upon trial, proves more productive than any other.
3. The best grain on a given plant is found in the best ear.
4. The superior vigor of this grain is transmissible in different degrees to its progeny.
5. By repeated careful selections the superiority is accumulated.
6. The improvement, which is at first rapid, gradually after a long series of years is diminished in amount, and eventually so far arrested that practically a limit to improvement in the desired quality is reached.
7. By still continuing to select, the improvement is maintained, and practically a fixed type is the result.

An account of Major Hallet's process may be found in *Popular Science Monthly* for July, 1883.

So far as the Station work has gone, these claims of Major Hallet have received confirmation. It is particularly noticeable that when each kernel of the ear of wheat is planted by itself, one kernel has invariably proved far more productive than any other one, not *per gradum* but *per saltum*, *i. e.*, not regularly, but at a jump.

E. LEWIS STURTEVANT, *Director.*

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## EARLY GREENS FOR NEXT SPRING.

The city markets in the early part of spring, and often in a mild spell in winter, abound in "greens," and there is no reason why these should not be equally abundant on every farm. Where the meat served is to a great extent salted, green vegetables are not only acceptable, but necessary to health. Cabbage is for many so indigestible, that it can not be eaten, and where this difficulty does not exist, a variety is always welcome. Spinach, the most delicate and palatable of all the vegetables used as greens, can be raised on any good farm land, and with very little trouble. The soil being well prepared by the use of the plow and harrow, mark it off in fifteen-inch drills, and sow the seed rather thickly, covering it with about half an inch of soil. Use a roller, or pat the soil down firmly with the hoe or back of the spade. Some carefully go over the rows and tread down the soil over them. The fall rains soon bring up the plants; they will grow rapidly and be large enough to gather in September or October. For use at this time, the plants, where they are thickest, are to be cut out at intervals, using a stout knife, leaving the remainder room to grow. Where the winters are severe, scatter straw, leaves or other litter between the rows, and slightly cover the plants. As soon as the ground thaws, cuttings may be made, and if this is done so as to thin the plants a second time, the rest will grow all the larger, and be ready to use later. "Sprouts," as it is called in the market, is a variety of kale, a cabbage that does not head. This is cultivated in the same manner as spinach. If a farmer finds that he has more spinach than can be consumed at home, a few barrels of it will meet with a ready sale at the nearest market.—*American Agriculturist for August.*

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## LIMA BEANS AS A FARM CROP.

The Lima, the most popular bean among amateurs and market gardeners, is slow in finding its way into the gardens of farmers. The dry beans sell for several dollars a bushel, and the market has never been adequately supplied. Lima beans are easily raised, and yield as bountifully as most other pole beans; and they continue to blossom and bear until killed by the frost. We know of no reason why they can not be made a specialty, like hops or tobacco, and grown on a large scale. They would require better soil and treatment than the common field bean, but as the price is three times greater, these could well be afforded. A rich gravelly or sandy loam suits them best, and the phosphatic manures are well adapted to them. On this kind of soil we have not found them to run to too much vine, even with heavy dressings of compost prepared from muck and stable manure. The vine is a strong grower and requires abundant nourishment. The pods are formed quite thickly from the top to the bottom of the poles. They want the full benefit of the sun and the rows running north and south, should be four feet apart and the hills four feet apart in the row. In planting we prefer to put the eye downwards, and not more than one inch deep. The first of June is early enough for this latitude. The bean needs frequent cultivation, until the vines shade the ground. This crop is well suited for farmers remote from cities and markets. The market gardener will not grow Lima beans to sell dry, because they are worth more in the green state, and he can sell all he can raise. But the farmer, however remote from the city, can market his whole crop in the winter, and be well paid for his labor.—*American Agriculturist for March.*

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## SHRUBS WITH ORNAMENTAL BERRIES.

In answer to inquiries for a list of shrubs and small trees which produce ornamental fruit after flowering, and after the leaves have fallen in autumn, the *Country Gentleman* names:

*Prinos verticillatus*, or Black Alder, which grows wild in muck swamps, and bears a profusion of scarlet berries, which continue through a large portion of winter. It grows well, and produces its masses of berries when removed upland.

*Celastrus scandens*, Bittersweet, is a climber, and with its clusters of orange-scarlet fruit may be made a graceful display in winter.

*Berberis vulgaris*, the Barberry, is ornamental as a shrub when in flower, and also with its beautiful racemes of berries, the purple variety being the most ornamental.

*Euonymus atropurpureus*, Burning Bush.

*Viburnum Oxycoccus*, the Bush Cranberry.

*Symphoricarpus racemosus*, the Snowberry.

*Juniperus Virginiana*, the Red Cedar, some trees of which bear a profusion of blue and purple berries, which have a singularly beautiful effect in winter, in connection with the dark-green foliage of the trees.

*Sorbus Americana* and *aucuparia*, the Mountain Ash, with their several varieties.

*Shepherdia argentea*, the Buffalo Berry, bears dense masses of orange-scarlet berries, and, being diœcious, it is necessary to have staminate and pistillate plants growing together. It is a shrub of straggling growth, but by pinching back and training, it may be brought into a symmetrical shape.

*Crataegus pyracantha*, the Evergreen Thorn, is a low-growing evergreen shrub, which, late in autumn and early in winter, affords a fine display of dense clusters of red berries. Being slightly tender, it should be planted in the shelter of evergreen trees.—*American Garden.*

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## GRAFTING THE GRAPE VINE—A NEW METHOD.

We desire to have new varieties of grapes come quickly into bearing, but vines from nurseries are usually tardy. Even after careful nursing they will often droop and die, while a few buds cut off on arrival and properly grafted may produce fruit in a short time. Grafting on cut off underground gnarly stumps of vines, as usually practised, is very uncertain at best. Our method is to take a good strong branch or cane of vine, or even a whole young vine when a change of fruit is desired, and whip graft in the usual way. We then cover up the vine in the soil as near the roots as possible, leaving above ground only a bud or two of the graft. It is well known how quickly a layer will make a bearing vine, as it has the advantage of the parent roots as well as the roots it produces. The layer may be extended, if long enough, to grow where the vine is to remain. Vineyards may in this way be quickly changed to better varieties.—*American Agriculturist for April.*

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## IS FRUIT-GROWING PROFITABLE?

N. Ohmer, of Dayton, Ohio, at a meeting of the Ohio Horticultural Society, read a paper on this question in which he said:

“First the individual must have a love or taste for the profession; must be intelligent and industrious; must work with his eyes open; must read up, and go from home occasionally to see how others in the same profession manage their orchards and fields of berries. I have never started out on a tour of observation, without learning something new and applying it to my benefit. If you don’t read up, and *get up*, you will very soon be numbered among those *who do not* succeed in making fruit-growing pay.

“The next condition I would name is the necessity of having proper soil and location. I would on no condition select a low and sandy bottom soil, but an elevated position, and good rich clay loam, well underdrained, either naturally or artificially.

“I would advise a beginner to go slow at first; that is, not to plant too largely of any one kind of fruit until, by experience, you know what does best in your particular soil and location. ‘But that is just what we want to find out,’ some of you will say. My experience, in every particular, will only apply to myself. A beginner must experiment more or less, if he expects to succeed.

“I know a gentleman who, because some other man succeeded in making a big thing out of the Iona grape, planted two thousand dollars’ worth of that particular grape, and the result was a failure. Another party planted largely of the Buffam pear, and the result was another failure. I might give you, in twenty-five years’ experience, some grand results with particular fruits, in specially favorable seasons. For instance, I gathered and sold, in one season, from three and one-sixth acres, 543 bushels of Wilson’s Albany strawberries, which were sold for near \$2,000. From four acres of Kittatinny blackberries, 562 bushels, which were sold for near \$3,000. From one and three-quarter acres of grapes, a net sale of \$1,100. From a half acre of quinces, \$300 worth of fruit, &c. But these are exceptional, and not general. I therefore repeat that the beginner must first try on a comparatively small scale. This will apply particularly to berries. Of tree fruits it takes a longer time to ascertain the value of any particular kind. I would therefore advise a beginner to make his choice principally from such as are known to do well in his neighborhood, and not plant too many varieties, though you want those that will ripen through the entire season.

“The time has come when it matters but little about your being *near* a good market. Two or

three hundred miles is now called a near market, and is so, in fact. I live, as many of you know, near the city of Dayton, Ohio, a city of about 50,000 inhabitants, which might be called a good market, and certainly it is, yet but little of my fruit is offered for sale in the city, being mostly sent to other markets, generally to the North, where better prices can be obtained.

“Of berries, I would advise to ascertain, by experience, what varieties do best with you, let it be of strawberries, raspberries, or blackberries. When you have found that out, plant largely of those that do best, never forgetting the fact, however, that there are more failures in planting too many acres of any one of the above named, especially the strawberry, than too few. I know a man who had made a great success with an acre or two of strawberries, gathering from 20 to 30 bushels per day, and was so elated at his success that he concluded to enlarge his fields—and, to use his own language, said ‘he would hereafter gather 100 bushels a day or bust.’ Well, *he busted!* You can make more money from one acre of strawberries, well attended to, than you can from five acres partially neglected. That will apply to all small fruits, but especially to the strawberry.

“It is hard for me to say just what one acre of any kind of fruit will net me annually, because I have many acres of each variety, and I sum up all together. I keep an exact account of all fruits sold, and the cost of same, and the result has been to me, in the last twenty-five years, eminently satisfactory. If any one has any doubts on the score of profits, let him come and see me, and I will show him figures that will satisfy him, or them, that fruit growing, as a profession, does not always prove a failure.”

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## WINTER PEARS.

A few facts will shew that the keeping quality of pears depends greatly on several circumstances, among which are the influences of soil, cultivation and season of ripening, and still more on the apartment in which the fruit is kept. Take the Anjou, for instance—circumstances favoring early ripening will give specimens which will be mature and melting by the end of September, but more commonly they ripen in October and November. This pear has the excellent quality of keeping without decay some weeks after the flesh has become melting and fitted for eating, if properly managed. In a cool apartment, the ripening may be retarded from December into January. The Winter Nelis is strictly a December fruit; but when ripened early and kept in a warm place, it is in excellent eating condition in November and sometimes in October. In a cool fruit room, after the season had been favorable for the purpose, we have actually had them in fair eating condition in early March. The Easter Beurre is a spring pear, and when well grown will keep, as is well known, into April; but it is so uncertain and unreliable at the North that few cultivators attempt to raise it. The longest-keeping, fully reliable pear of which we have made a full trial, is the Josephine de Malines. The specimens rarely soften in any year before January, and usually a part of them keep into February. This year we kept them much longer than usual, and had specimens in melting and fair eating condition on the 2nd of May. The fruit room is not cooled by artificial means, but is so arranged that it may be ventilated completely at all times, and its temperature is shewn by thermometers. The spring being unusually cold, favored long-keeping.—*Country Gentleman.*

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## FRUIT CULTURE IN COLD RUSSIA.

Professor J. L. Budd's record of the wonderful success attained by the Russians in fruit culture, is certainly very encouraging to those living in the colder parts of the United States. The whole of the large province of Vladimir, which is east of Moscow, is given to the growing of cherries. Hundreds of proprietors in this province have each orchards of 10,000 "bushes." These fruit trees are not allowed to grow in tree form; the oldest branches are pruned out, it having been found that the best fruit is formed on young shoots, several of which are left to grow from one root. South of Vladimir, near the fifty-sixth parallel, where the thermometer sometimes falls to fifty degrees below zero, immense quantities of plums are raised, many of the varieties being equal to the best German prunes. Pears and apples are also a success. The apple trees, too, are made to grow low and bushy, but they bear abundant crops of excellent, highly-colored fruit. The method by which the Russian orchardist is able to obtain a variety of fruits of good quality in a climate where the winters are more severe than in the coldest part of Minnesota, is certainly worthy of being tested in some of the less favored regions of our own country. The main points ascertained in this method seem to be; selection of hardiest varieties of seedlings; close planting to secure mutual protection; low pruning; the growing of more than one shoot from a root; and retaining only the young vigorous wood. It would be well to test this method on some of our bleak prairies, not only with Russian varieties, but with some of our own hardiest kinds.—J. M. M., in *Green's Fruit-Grower*.

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## SNYDER BLACKBERRY—ITS PRODUCTIVENESS IN IOWA.

I have one plantation 10 by 11 rods square; this patch containing 110 square rods was put out in the spring of 1877, on land that had been in cultivation with crops of various kinds, about thirty years, soil clay loam, bleak north-west exposure. A part of the plot had previously been set to apple trees twenty feet each way, and when setting the blackberries one row was set in line of rows of trees, and two rows between, making rows of blackberries six feet eight inches, and plants four feet in the rows, but sprouts coming up having been left to grow up in the rows making a perfect mat and now forming a complete hedge row, except where the apple trees stand, nineteen of which now large are still growing in the plantation without any perceptible injury to the blackberries except the space they occupy.

The plantation was cultivated and hoed three seasons, since then nothing has been done to it except to cut off weeds and sprouts between rows, and cut back and prune fruiting canes annually. No mulch or fertilizer of any kind has been used. The surplus sprouts between rows have all been taken up each fall or spring and plants sold or used in making other plantations, and no evil results from such practice has followed, which seems to be conclusive evidence that digging surplus plants from bearing plantations does not injure the plantation as has been claimed.

I give this brief sketch of the patch and its treatment, that your readers may have some idea how the large crop of Snyders that I have to report was produced.

This plantation has produced a paying crop of fruit since '78, its first fruiting year, and was the past season in full bearing, judging from the amount of fruit produced, which was 5,643 boxes. Yet, as incredible as it may appear, there was actually picked and sold this season from

the patch containing 110 square rods over 176 bushels of berries which would be at the rate of 256½ bushels in round numbers per acre. My other and younger plantations, not yet in full bearing, produced equally as well in proportion. Of course we would not expect to obtain as large a crop every season, for notwithstanding the Snyder is called an iron-clad and will stand more abuse than any other blackberry of which I have any knowledge, yet it does some severe winters get injured and fails the following season to produce a full crop. But during the eight years I have known and observed its behaviour, it has not in this locality failed to produce a paying crop each and every year, and with few exceptions enormous crops. Therefore my observations and experience with this noble berry leads to the conclusion that in vigour and beauty of bush, uniformly fine size and splendid quality of its berries, extreme hardiness and marvelous productiveness it stands without a rival among blackberries, especially in the north-western States, where all, or nearly all other varieties are unreliable and unsatisfactory.—S. R., in the *Fruit Recorder*.

Clinton Co., Iowa.

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IMPORTED SPARROWS.—Secretary Garfield says one pair of our insectivorous birds are worth more to the fruit-grower than all the imported sparrows.

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## RASPBERRIES IN ILLINOIS.

Messrs. P. Earle & Sons' experimental patch of raspberries affords a good study of the different varieties now under cultivation. A visit paid last week was a little late for some of the earlier sorts. The 30-acre field of Turners had been in the hands of the pickers for three weeks and was yielding a first crop of from 50 to 60 crates daily. As is well known, this is the Messrs. Earle's favorite variety which they have championed for the last 12 years.

The rows of the Reliance red raspberry showed this to be a very prolific bearing variety, of a well flavored, large, dark colored berry. The grains are large and the general shape of the berry too nearly round to render it a good shipping berry. Mrs. Earle considers it an excellent berry for the family garden and table use, as its lively, sprightly flavor is quite an agreeable change from the cloying sweetness of the Turner. It parts readily from the stem, and is a decidedly better berry than the old Philadelphia.

The Lost Rubies very greatly resemble the Naomi, which we have grown for fifteen years. The berry is large, with large grains, of lively flavor, prolific, and of good color and firmness. It has the same fault of the Naomi in not being a perfect self-fertilizer, more or less of the grains or berry being imperfect, and, like the Naomi, it clings to the stem, and is apt to crumble or break in the pulling off. The only difference noticeable between the two is the color of the lower cane, which, in the Naomi, is a pinkish purple, and in the Rubies a light green. They are not, either of them, berries adapted to field culture in Southern Illinois.

The Brandywine is a good-sized, bright-looking, firm berry, and appears every way desirable, except in flavor, of which it can hardly be said to have any. Like the Ben Davis apple, it is sold on its good looks, and it sells well. Perry Turner, of Jonesboro', has five acres of the Brandywine which have paid him better than any five acres of any other raspberry have paid.

The Cuthbert, or Queen of the Market, is a berry that pleases Mr. Earle very well. It is of a beautiful, high crimson color, conical in form, holds on well to the stem, and is of very good flavor. A dish of these berries is exceedingly attractive. It is somewhat later than the Turner, which is not always a fault.—*Farmer and Fruit Grower*.

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## EARLY APPLES FOR MARKET.

In selecting early apples, it is important to regard appearance, as such fruit is judged by the eye. A friend told us, a few years ago, that two trees of the "Summer Queen" were the most profitable of any in a large orchard. It is later than some others, but its large size and showy character, it being handsomely striped and shaded with red, caused it to bring the highest price. Another very showy fruit—and one of the most attractive—is the "Duchess of Oldenburg." It ranks, perhaps, as an early autumn, rather than as a summer fruit, but is so hardy, productive, and handsome, that it should not be omitted. Among other excellent early sorts are: "William's Favorite," a handsome red fruit; "Tetofsky," a Russian apple, now becoming very popular; "Red Astrachan," a beautiful red, but sour apple, and perhaps more generally planted than any other; "Carolina Red June" is similar in color. "Early Harvest," "Large Yellow Bough," and "Summer Pippin," are among the best of the yellow or green apples. We have given a sufficiently large selection for a market orchard. If one wishes choice fruit for home use, he can find nothing better than the "Primate," "Early Strawberry," and "Summer Rose," but save the second named, they are not so desirable for orchard culture. Selecting early apples, and packing them carefully in new half barrels, lined with white paper, or in suitable crates, will greatly increase the market returns for this kind of fruit.—*American Agriculturist for August.*

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## THE BLACK KNOT ON PLUM TREES.

Dr. B. D. Halsted, writes of a serious pest of the orchard, in the *American Agriculturist* for August.

Mr. D. D. Gaines, near Catskill, N. Y., brings us peculiarly distorted branches from his plum orchard, and complains that the trouble is a serious one, as he has over two thousand plum trees more or less affected. The cause of this distortion of the smaller branches is a fungus, and it has long been known as "Black Knot." It has often been claimed by careless observers that the swellings were due to various insects which infest the peculiar outgrowths. The parasitic fungus attacks the young branches in early spring, causing them to increase rapidly in size; rupture of the bark soon follows, and the soft substance, coming to the surface, expands in an irregular manner, and is shortly covered with a peculiar olive-green coat. The fungus plant is like many others of the same low order of vegetation as the various moulds, mildews, etc., and consists of a multitude of fine threads, that run in all directions through the substance of the plum tree. The olive color of the surface is due to a vast number of minute bodies called spores, which are formed on the tips of the threads, and, breaking away from their attachments, serve to propagate the trouble. After the knot has grown to some size, its soft substance offers a good home for various kinds of insects, and it is rare to find such a knot that is not thus infested. This was the strong argument in favour of the view that the knots were of insect origin. The scientific name of the fungus is *Sphaeria morbosa*, and this, the cause of the black knot, is as much a plant as the plum tree upon which it lives.

The olive surface-spores continue to form through the summer, and at autumn another kind of spore begins to develop within the substance of the knot. These are of slow growth, and are not



ripe until the following spring. The only remedy thus far known is the judicious use of the knife. The knots should be cut off and burned whenever they are found. They are most conspicuous in the winter, when the branches are not covered with leaves; but when a tree is attacked, it is not wise to delay the removal until a more convenient time. The diseased branches should always be burned, otherwise the spores will continue to form for awhile, and thus propagate the contagious pest. If the tree is badly attacked, it may be best to remove it entirely.

The Choke Cherry is a favorite host of the black knot, as the neglected fence rows often show in winter. All such trees should be rooted out. The cultivated cherry trees are subject to attacks by the black knot, for which the same remedy as that for the plum tree is recommended. Use the pruning-knife, always at sight, and cut several inches below the swelling, that all the infested portion may be removed.

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ARSENIC WATER FOR CODLIN MOTH.—J. N. Dixon, of Iowa, sprayed his apple orchard with arsenic water to eradicate the canker-worm, and unexpectedly found it a remedy for the codling moth.

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## A GOOD PLACE FOR FOREST TREES.

The Lancaster (Mass.) *Farmer* says, in alluding to the use which may be made of stony ground:

“There is on many farms more or less of ground so rocky that it will not repay the expense of cultivation, and all such spots should be planted with trees. These may be got out of the woods or farm nurseries; or what would be easier, cheaper and probably much more effectual, the seeds of various kinds of trees could be sown, imitating as nearly as possible the natural processes which have produced all the forests of the country. The seeds of the different trees should be gathered in the woods just at the time they fall naturally, and they should be immediately planted in little shallow holes among the stones and covered with a little earth. There the rains of autumn, the snows of winter, and the sunshine of spring would bring up a crop of young trees, which should be fenced in from cattle and left to themselves. They would require no labor after the first sowing and fencing except subsequent thinning out from year to year of those that were too crowded or most valuable for economic purposes. If hickory nuts, black walnuts, butternuts, chestnuts, and the seeds of sugar maples, pines or spruces were any of them sown every here and there over the place intended for a grove, the most valuable kinds, and those that thrive best could be ultimately left to become great trees. After ten years the annual thinnings of this grove for firewood, fencing, hop-poles, railroad ties, etc., would probably make it as valuable a part of the farm as any other, and when the black walnut and butternut trees become large enough to be sold to cabinet-makers the value of the grove would be very great. The present race of farmers may say they would not live to see the trees become fit for the cabinet-makers, but none the less would the growth of that grove increase the value of the farm every year, and that whether the owner sold it or left it to his children.”

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## SPARE THE TOADS.

There is no better abused, and probably no more useful creature in the garden and upon the farm than the toad. That apt simile, "like a toad under a harrow," tells the story of his wrongs. And now that our harrows are armed with steel teeth, and are supplemented with clod crushers and cultivators of various types for comminuting the soil, the sorrows of the toad are intensified, and he is threatened with extinction in all cultivated fields. Stay thy hand from slaughter, tiller of the soil. The toad is as useful in his place as the implements of tillage you drive over his back so thoughtlessly. "The jewel in his head" is not there, but in his capacious stomach, that always has room in it for one more bug, one more worm, that destroys the food of man. Watch his habits for a day, and observe the lightning thrusts of his tongue as he scoops in your enemies, and you will have a better appreciation of his work, and of his place in good husbandry. If your garden is without toads, you can afford to purchase them for stock. They will pay good dividends, as surely as superphosphate.—*American Agriculturist for August.*

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## THE TAYLOR BLACKBERRY.

Mr. O. B. Galusha, President of the Illinois State Horticultural Society, says of this berry:

"I have had the Taylor since its first introduction, paying \$1 each for the plants first purchased, and have been more and more impressed with the deliciousness of its fruit each year. I know of no berry of any species or variety whose juices are of a purer, more delicate sweet flavor. I think it will bear a crop five seasons out of six. The canes are of smaller growth than those of the Snyder—which is an advantage, and produce a large crop of fruit, which is of a symmetrical, oblong shape, good medium size, of a shining black color, and as has been said, of an exquisitely delicious flavor—no twang left after eating and no core in the centre to be masticated or swallowed whole, as with Kittatinny. The Taylor also has one peculiarity which forcibly struck all our berry pickers who picked the fruit this year, viz., the absence of sunscald which was so common this season."

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## SINGULAR FREAKS.

There is in Mr. L. Harwood's garden, in the West Ward, a Siberian crab tree, which has been bearing about four years, that is covered with blossoms, but has not had a leaf on this season.—*Orillia Packet.*

MR. W. H. KENT, of Medonte, on going to examine his fruit blossoms this spring, found that one tree, off which he had gathered fifteen bushels last autumn, was completely laden with small apples, which must have formed in the fall, after the fruit had been gathered. What effect this will have on the tree he cannot predict, never having heard of such a phenomenon, but he fears it will kill it.—*Orillia Packet.*

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## BOOK NOTICES.

PREMIUMS OFFERED AT THE SEVENTEENTH ANNUAL EXHIBITION OF THE NEBRASKA STATE FAIR, to be held at Omaha, 10th September, continuing for six days.

COMPLETE GUIDE TO SILK CULTURE, by *L. Capsadell* published by W. B. Smith & Co., New York. In this little volume the author, Secretary of the New York Silk Exchange, has given in the shortest possible space concise and practical directions in every detail of silk culture; Silk-food Trees, and how to Raise them; Cocooneries; Eggs, and how to Hatch them; the Rearing of Silk-worms; Races, Varieties, and Value; Gathering, Stifling, and Packing Cocoons; Reproduction; Reeling, and Spinning, and Requisites for Silk Culture are plainly described and illustrated. The wide and promising field which, at present, is opening for American silk culture, which cannot but develop into a most important industry, in the near future, makes the publication of such a work most desirable.

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## MISCELLANEOUS ITEMS.

SHARPLESS STRAWBERRY.—Mr. D. C. Hommell, of Knoxville, Tenn., shows up a strawberry of the “Sharpless” variety that measured eight and one-quarter inches in circumference.

ARE SMALL FRUITS PROFITABLE?—A fruit grower who has had considerable experience in the business says that small fruits as an average, such as strawberries, raspberries, blackberries, currants, grapes, etc., yield, as a rule, double the profit of apples, pears, peaches, plums, for the reason, principally, that small fruits come immediately into bearing, and produce every year. Prices are more equal from year to year, varying less than apples and pears.—*Prairie Farmer*.

WATERLOO PEACH.—This is the largest very early peach we have grown or seen. The first specimen ripened July 14th, and measured 10 inches in circumference. All the fruit was gathered and mostly over-ripe, on the 19th of the same month. It ripened about three days in advance of the Alexander. It is a remarkable keeper; ripe specimens have been kept in perfect condition nearly a week after being picked. It will therefore be valuable for shipping.—*Fruit Recorder*.

VALUE OF THE SUNFLOWER.—It is the best egg-producing food known for poultry, keeping them in a thriving condition and largely increasing the production of eggs. Every poultry raiser who tries it will find that this seed is the food known for glossing the plumage of fowls, and is almost indispensable to those who want to fit their birds for exhibition to the best advantage. The Russian sunflower is easily raised, requires very little care, can be grown in fence corners or other places difficult to cultivate. Its production of seed is immense, yielding often at the rate of one hundred bushels to the acre. It should be planted in hills four feet apart, any time from the tenth of May to the first of July. Three quarts of seed will plant an acre.—*Iowa Homestead*.

TOMATOES raised in poorish light soil will ripen ten days earlier than those raised in rich soil. We know this from the actual test during the present season. If large, showy tomatoes are wanted, regardless of flavor or time of ripening, then the rich soil and the rank growth are needed. Cutting off all but one or two fruits of the clusters while they are small and green will also cause those remaining to grow to a larger size.—*Rural New Yorker*.

THE SILVER BELL TREE.—*Halesia tetraptera*, known in England as the snow-drop tree, and in this country as the silver bell, is one of the handsomest of all our hardy shrubs. It is a native of

upper Virginia and Southern Ohio. Its white, bell-shaped flowers appear in May, and impart a graceful appearance to the whole plant. The flowers are followed by a four-winged fruit, hence its specific name. It sometimes grows twenty feet or more in height, but in gardens is usually a large shrub. On account of its rather difficult propagation it has not been largely introduced into cultivation.—*Country Gentleman*.

LARGE PEACH ORCHARDS.—The largest peach orchard in the world, without exception, is that of John Parnell, at West Point, Ga., which contains 135,000 trees. The frost on the 23rd day of April destroyed about one-half the crop. The next largest orchard belongs to Judge Cunningham, at Griffin, Ga., and has 60,000 trees. About one-third of this crop is injured. The fruit centre of Georgia is two miles from Griffin at Vineyard, where the prospects are good for a fine crop. The peach crop of Georgia, this year, will be about half the usual average, but the fruit will be larger and better, from the thinning out by frost.—*Farm, Herd and Home*.

APRICOT-GROWING IN CALIFORNIA.—The *Wine and Fruit Grower* says;—We learn from the Marysville *Appeal*, that apricot orchards are the rage in its immediate section. The past season, trees three years old paid ten dollars to the tree. The *Appeal* adds its testimony to the fact that there is not the slightest danger of overdoing the business, as the canneries can handle all the fruit that can be produced. It is stated that some of the farmers in the vicinity of Berryessa, located on what they have recently learned to call apricot lands, are preparing to engage extensively in fruit culture. Thousands of apricot trees are to be set out on lands heretofore “wasted” on grain culture.

PRESERVING PEAS.—The most effectual method we have found for preserving peas from withering or drying up in a drouth, is to mulch them thickly with coarse hay or straw, to a width of at least two feet on each side of the row. Our garden soil is a fine, porous gravel, and unless the season is cool and moist, the pea vines dry up so badly as to produce little fruit. Mulching heavily is consequently a necessity in order to save them. By doing this, we have obtained as good crops as when May, June, and July were cool and rather rainy. It is not necessary to bush dwarf peas. Still, when exposed to a strong wind, they will sometimes blow down, and then the further advantage of their being mulched is that the pods are kept clean and dry, and escape being mildewed. It is an excellent thing also to mulch both pole and bush beans, melons, squashes and cucumbers in the same way.—*American Agriculturist for June*.

AMPELOPSIS VEITCHII.—Among our beautiful climbing vines, the *Ampelopsis veitchii* stands in the front rank; and its well-deserved popularity should cause it to be more freely planted than it is. It is a native of Japan, leaves some-what smaller than those of the well-known American ivy, *A. quinquefolia*, overlapping one another and forming a dense sheet of green. The plant is a little tender when young, and requires slight protection the first winter. It is of rapid growth, and has the clinging nature of ivy. Its foliage is of most beautiful green in summer, changing to variegated crimson scarlet in autumn. For ornamenting brick and stone structures, it is superior to all other climbing vines. The citizens of Boston are peculiarly attached to this vine, and many of the finest structures there are made more beautiful by the addition of this plant. It cannot be too highly recommended, and will meet the fondest expectations of all who plant it.—*Country Gentleman*.

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## THE CROWN O' THE YEAR.

Out of my low little lattice  
I looked, and the skies were blue;  
And the gossamer robes of the Morning  
Were spangled with diamond dew;  
There were pearls on the wayside sedges,  
And gems on the hawthorn spray,  
And a scintillant rainbow shiver  
Ran over the fields and away.

A merry tom-tit was singing  
A-top of the maple tall;  
And a gadding rose, belated,  
Looked over the garden wall;  
The brooklet, astray in the meadows,  
Was piping her reedy song:  
Ah! Fair is the Spring! I echoed:  
And Summer is gladsome and long!

With her lovely procession of flowers,  
Her music of bird-song and breeze,  
Her sunshine and soft tripping showers,  
And lullaby droning of bees!  
And Winter is hale and wholesome,  
With his bluster and sparkle and cheer;  
But Autumn, brown-bearded and ruddy,  
Weareth the crown o' the year!

Heir of the bountiful seasons,  
He opens his lavish hands,  
And the gold of a myriad harvests  
Is scattered about the lands!  
It rustles along the corn-rows,  
It glimmers among the sheaves,  
It mellows the red-streaked apples  
That dangle about the eaves!

Fanned by his frosty northers,  
The wide woods kindle and blaze;  
The infinite ether above us  
Smiles down thro' a daffodil haze;  
The golden-rods light up the thickets;  
With mosses, and brambles, and ferns,  
He spreads for our footsteps a pathway  
Of glory that glitters and burns!

A luscious ripeness lingers  
Abroad in the sunny air;  
And a thousand rich aromas  
Steal on us unaware;  
Let Summer vaunt her roses,  
And Winter his princely cheer,  
But Autumn, brown and ruddy,  
Weareth the crown o' the year!

EMMA ALICE BROWNE.

*N. Y. Ledger.*

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CHICAGO'S PARKS.—From 125,000 to 150,000 plants are raised every year to fill the beds in Lincoln Park, Chicago. Of these about 24,000 are geraniums, 37,000 coleus, 20,000 Echiveras, and the remainder mixed plants in lots of from 1,000 to 3,000. One of the large beds in the park requires 10,000 plants to fill it; several of the baskets and vases require from 150 to 250 good-sized specimens. There are four houses, each 100 × 12, and a number of cold pits or frames, in

use for raising these plants.—*Michigan Farmer*.

THE RUBBER PLANT IN MEXICO.—Mexico is making a study of the culture of the rubber plant. The hardiness of the plant is said to be such that its culture is exceedingly simple and inexpensive, where the climate and soil are suitable. In much of the Mexican coast region the only expense is the weeding required when the plants are young, to give them a chance to grow and strengthen.

TOBACCO JUICE VAPOR FOR PLANTS.—The vapor of tobacco juice has been tested in France as an insecticide in green houses with great success. Instead of burning or smoking the tobacco, which is a very offensive process to some persons, the tobacco is made into an extract by soaking or boiling, and the juice is then placed over a chafing dish, a fire, or the flame of an ordinary lamp, and deposited in the greenhouse or conservatory. Delicate plants which are very sensitive to smoke are not injured by this vapor, and it leaves no offensive atmosphere, while it effectually disposes of thrips, lice, scale insects, and slugs. One quart of tobacco juice vaporized in a house containing 350 cubic feet is an ample amount.—*Scientific American*.

PLUMS FOR MARKET.—At the late meeting of the Western New York Horticultural Society, R. N. Handy, of Orleans County, asked for the best market plums for an orchard of 200 or 300 trees, which he intended to set out in spring. S. D. Willard, who has had much experience with plums, said it is hard to select for others, but he would name the Lombard, Copper plum, Reine Claude de Bavay, as profitable for market. All plum trees must be well fed, or else it is better not to plant them at all. The Reine Claude de Bavay is liable to overbear, and the fruit must be timely thinned. The yellow or light-colored plums sell best. He plants his trees 12 by 16 feet apart; some of them 16 by 16. Moore's Arctic plum, from Maine, was highly spoken of for cold regions. Mr. Barry said Pond's Seedling is a valuable market sort, but a light bearer while the tree is young. The McLaughlin was commended for high quality. The Jefferson is an excellent plum, but the tree is a poor grower.

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## TRANSCRIBER NOTES

Misspelled words and printer errors have been corrected. Where multiple spellings occur, majority use has been employed.

Punctuation has been maintained except where obvious printer errors occur.

Some illustrations were moved to facilitate page layout.

A Table of Contents was created with links to the articles for easier use.

[The end of *The Canadian Horticulturist, Volume 6, Issue 8* edited by D. W. (Delos White) Beadle]