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# The Canadian Horticulturist.

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## WINTER MEETING.

### SECOND DAY.

The session began at 9.45 a. m. There was a large attendance of delegates, among whom were many who were unable to be present on the first day.

Mr. A. M. Smith, chairman, presented the report of the committee on fruits.

Mr. Page, chairman, presented the report of the committee on vegetables, which contained a mass of valuable information. Referring to the varieties of potatoes suitable for growth in Ontario, the report mentioned the Alpha, seedling from Early Rose, clear white flesh, fine grained, decidedly excellent flavor. Beauty of Hebron, very early, tubers good several days before Snowflake; flesh solid; yield enormous. This variety will soon supersede the Early Rose. Brownwell's Beauty is a good cropper. Brownwell's Superior ripens late; not desirable for table. Compton's Surprise, flesh white and sound. Early Ohio, seedling of Early Rose, but several days earlier. Early Snowflake, ripens a week after Early Rose, fine flesh, good cooking potato. Grange, new seedling, kidney shape, yields well, fine for table. Improved Peachblow, cross between Excelsior and Jersey Peachblow; late but good keeper. Sutton's Magnum Bonum, an English variety; great productiveness; late keeper; kidney shaped. Washington, new variety; tubers long; fine grained; productive; few days later than Early Rose. Treble X, firm; cooks well. White Peachblow, seedling of a peachblow; very late; dry and mealy. Of sweet potatoes, Yellow Nansemnod, Bermuda and Early Peabody are given in order of quality. These three are best for Ontario. Growers set out plants early to be successful. Sweet potatoes succeed best in light, thoroughly worked soil, well manured; they want all the sun heat they can get. Peanuts

can be grown in our light loamy soils, but probably the season is not warm enough. The best soil for potatoes is a rich loamy sand, not too wet nor cold. The best fertilizing elements are nitrogen, phosphoric acid and potash. Nitrogen is obtained from the air, phosphoric acid from bone meal, and potash from wood ashes. Chinese Yam. This vegetable is valued much as a flowering vine. The tubers are valuable for food, boiled or roasted. They will grow a second season if left in the ground.

The root crops have become of importance in Ontario. The sugar-beet ranks high as food for cattle. In England the mangold-wurzel is taking the place of turnips as food for cattle. Root crops are of benefit in keeping the land clear.

In reply to questions, Mr. Page said he thought Paris green was best applied mixed with plaster of Paris. The Chinese yam could be procured from Bliss, New York. Mr. Arnold thought from experience the Chinese yam was perfectly useless. Mr. Saunders, London, thought the best way to apply Paris green to potatoes as a destroyer of potato bugs was by mixing it with water. Mr. Saunders spoke of a substitute for Paris green called London purple, the main ingredient in it being arsenic; but it was variable in its action, and not so good as Paris green. Mr. Jarvis, of Stratford, thought the Chinese yam was a failure, and the sweet potato a delusion and a snare in this country. Respecting the potato bug, Messrs. Buck, Ottawa, and Jarvis, Stratford, were hopeful, saying they believed the insect was gradually disappearing from those sections. Mr. Saunders thought the insect enemies of the bug were making great war on it, and the climate last year had been adverse to its production. This appeared to be the opinion of a majority of the gentlemen present.

Mr. Page was pleased at the discussion his paper had brought out, and believed the yam would make a pretty creeper, if otherwise worthless.

Mr. Woodward thought the Chinese yam would not be a success as a vegetable, and that this climate is not suitable for the Colorado beetle.

#### ROSES.

Mr. Beall, Lindsay, named twenty-four varieties of roses.

Mr. J. Wellington considered the Duchess of Edinburgh an excellent rose. The impression that Canada is not a country for roses is not

well based. The ground should be carefully and deeply prepared, and bushes should be well cut back, as they require suitable winter protection.

Mr. Beadle thought that in the cloudy climate of England the rose attained to greater perfection than here, as the hot sun seemed to burn up the flowers, and would recommend shading during mid-day; knows a person who shades with canvas; the cultivators are hybridizing with the Noisette, and expect a new strain of great value.

Mr. Bucke thought the rose might be made more hardy if the hybridist went back to the initial step, and crossed the glorious roses of England and France with the native dog-rose.

Mr. Dempsey gave his experience. He planted roses in the shade, and finds that if a healthy, vigorous growth is maintained there will be very few insects; prefers cow manure.

Mr. Arnold thought the growers should begin at once and cross the foreign with the native wild rose. Burned sod makes the best manure for the rose.

Mr. Saunders would apply Paris green as a remedy for the worm, which eats the half open buds; would also apply it for the rose slug.

Mr. Woodward uses whale oil soap for rose insects.

Mr. Bucke read a paper on nut-bearing trees, as follows:

#### NUT BEARING NATIVE TREES.

"Can any of our native nut bearing trees be profitably cultivated, either for nuts or timber, and where is the northern limit of each?"

The above question has been put into the hands of every member of the Fruit Growers' Association, and I trust it will meet with a response not only from those who are assembled here to-day, but from others also who take an interest in forest tree culture,—a subject which is awakening a deep interest, not only in Ontario, but in all parts of the Dominion, where the denudation of both the public and private domain is being carried on to an alarming extent. But deeply as we are interested, who once had, and are losing our forests, still more will those be exercised over this question who have, are, and will be settling in our northwestern plains, where, from the sweeping forest fires and other causes, forests such as we have "loved and lost" have had no existence "in memory of the oldest inhabitant."

Although the above question only calls for remarks on nut bearing trees, others have a proportionate value, and any remarks with regard to the cultivation of these, will apply equally to the seed and cone producing varieties as well.

The BUTTERNUT has the most northern limit, which is found to begin at the southern end of Nova Scotia, running north it passes about midway through New Brunswick, crossing the St. Lawrence River at Quebec and extending some thirty miles to the north of the city of Ottawa, and from thence strikes the southern end of the Georgian Bay. This tree is the hardiest of our nut-bearing species, and the area of its growth is quite extensive, and for all practical purposes it could by replanting be maintained for all time to come. Every autumn the nuts are sold by the two bushel bag on the Ottawa market, but I am unable to quote the price, never having purchased many. The timber of this tree loses the name of butternut when it is cut into boards and scantling, and assumes that of grey walnut. The expert cabinet maker, by a certain staining process, is enabled, after the wood is worked up, to make it so resemble black walnut that it requires a practical eye to tell the difference.

With regard to the cultivation of this tree, I speak from practical experience when I state it is one of the very easiest grown I know of. If given anything like a square chance it will produce nuts after ten years planting, and I believe a good saleable tree may be had of 18 inches through, at from twenty-five to thirty years from the nut.

The seeds are not in great demand at present, though I feel sure if they were advertised like other commercial products a market for them could be created, both for home, the Northwest and European planting, and I make no doubt the United States alone would absorb a large quantity, if nurserymen, private individuals and farmers knew where they could be procured.

Besides the value of this tree for timber and nuts; the feathery palm-like spread of its graceful leaves and clean looking stem, makes it a great object of beauty on the lawn, and for a wayside tree or a pasture shelter there is nothing gives a much denser shade, though probably if planted along our roadsides the ubiquitous boy might injure it whilst robbing the trees of their autumn nuts. Those gathered early in the season make a pickle fully equal to the walnuts of English manufacture for which Cross & Blackwell are so widely celebrated.

This tree has another advantage for wayside and hedge row planting, it never suckers. The bark is also often used by farmers' wives for imparting a rich brown to their home-spun yarn, before it is manufactured into stockings, or woven into fabrics.

**BLACK WALNUT.**—*Juglans Nigra.*—This tree closely resembles the former in shape, and the general appearance of its leaves, so much so that people accustomed to see them side by side are scarcely able to distinguish them, but by running some leaves through the hand the black walnut gives off a strong scent, whilst the butternut is odorless, the nut of the former is more spherical than the latter, and does not contain so much kernel as the former. This fact however does not detract from it as a suitable nut for a pickle. It is scarcely necessary to state that the wood is much more valuable and that its crotches and roots are greatly sought after for cabinet work, gun stock, etc., and all purposes for which it is required; it brings a high price in the market.

This tree is only indigenous to a small area, extending from a point near Port Franks, on Lake Huron, running north of London nearly in a line with the Grand Trunk Railway to Toronto, and extending along the lake shore as far east as Cobourg. I am satisfied, however, these limits could be considerably extended, but even the area mentioned would give a good many thousands of acres of waste lands and side roads for planting, should no one feel disposed to trespass on the best part of his farm for the cultivation of this most valuable of all Canadian trees.

**SWEET CHESNUT.**—This tall and handsome tree, the leaf of which much resembles the beech, but is more glossy and attractive, has a still more southerly range. The northern line of growth crosses the Detroit River a little above Windsor, cutting across the Peninsula to Long Point. Taking a northerly direction from this point on Lake Erie, before Port Stanley is reached, the line strikes near St. Thomas, running north of Hamilton and Toronto, curves about forty miles north of Lake Ontario and runs into that lake a little further east than Port Hope.

The nut produced by this tree, though frequently sold in stores, has not a very high commercial value, as it is smaller than those cultivated in Europe. It however serves to indicate in the same way our wild grapes do, that the better varieties might be easily grown.

Its wood is chiefly used for furniture in ladies' boudoirs and bedrooms, as it gives a bright and airy appearance to a room. Its grain is wide and open, and when oiled and varnished has a pretty light yellow color.

HICKORY, (*Carya Alba*).—The northern habitat of this tree is probably on a line with the butternut. The shell bark variety finds its chief home in the woods of the County of Lambton and West Middlesex. The tree is not easily cultivated, as it is a slow grower and difficult of transplantation, but its wood is so valuable where its toughness and elasticity are required that it commands a high price. It is principally used for tool handles, carriage spokes and felines, and if grown in sufficient quantities would readily find a foreign market at remunerative prices. This tree is usually cut in its juvenile stages, when from four to six inches through at the butt, and consequently could be advantageously grown in plantations between trees used at a more mature age, which would be relieved by removing the hickories as required. If grown as proposed the nuts could be dropped where it was intended the tree should stand. The foliage of the hickory is of a light pleasant green; the rich leaf would add much to the beauty of the home surroundings. The nut deprived of its shell may be obtained from all itinerant newsboys on boats or cars, as no doubt my hearers can willingly testify.

I would strongly urge upon our farmers and others, especially those in youth and middle age, to begin at once, if they have not already done so, and prepare a suitable piece of ground, well fenced with some durable material such as cedar posts and barb wire, and obtain and plant some of the nut bearing specimens I have spoken of. Any soil suitable for corn or wheat, having previously had a hoeing crop such as potatoes or mangolds would suit admirably for the purpose. A half acre well plowed and planted with nuts would raise enough young trees to cover several hundred acres, or if used for roadside planting would extend a number of miles. The cost of seed, care and culture would scarcely be felt, while the beauty insured would be a lasting one, and would hand down the name of the patriotic individual who went into the business for many generations. Seeing trees grow is a thing that all lovers of nature take pride in, but to grow them oneself is a pleasure indeed. Before the white man invaded this continent all the nuts alluded to were used by the North American Indians

as an article of diet, and ancient records testify that the quantity consumed at one meal was incredible, and certainly would be unsafe for more civilized stomachs.

I have omitted to mention the acorn or quercus family, of which there are five varieties, as I do not suppose they come within the meaning of the term "nut bearing" trees.

I cannot close this paper without a further strong recommendation to all those who have not given this matter the attention it deserves, to begin at once to plant, and to plant early and plant often, and especially to commence with the nut-bearing trees. The collection of their seed is easily made, much more so than that of the smaller seeds. My friend Chief Johnson can supply any amount of either black walnuts or butternuts, and they will be found the handiest and easiest to plant. It would be well also to secure at some of the shops at once, before they become too dry, some sweet chestnuts, and pack them in moist sand, keeping them in a cool cellar until spring, when they should be planted early, in a deep rich bed, about an inch and a half deep. I will conclude this paper with a few lines written for the occasion :—

No man who owns a house or hearth,  
 A rood of land, a speck of earth,  
 Can say his duty he hath done,  
 If when the eve of life hath come,  
 He cannot point to some cool shade  
 By tree, himself hath planted, made  
 Its youth his youth in union sprung,  
 In middle age its praise he sung,  
 And ere his mortal coil shall dwell  
 In tenement of coffin shell,  
 Beneath its shade a spot he'll choose,  
 Where autumn skies and autumn hues,  
 Shall blend in harmony on high ;  
 And from a noble canopy,  
 His only epitaph shall be  
 The waving sigh of that dear tree.

Chief Johnson said that His Excellency had obtained nuts of the black walnut from him to send to Scotland and Hyde Park, England. He has an offer of \$1. per foot for the timber.

Chief Johnson presented a two bushel bag of curious sweet corn.

Mr. Woodward moved that the thanks of the meeting be tendered to Chief Johnson for the same.



A vote of thanks was tendered Mr. Bucke for his valuable paper.

It was decided to combine the seventh and eighth questions, viz : (7) The best variety of hardy climbing shrubs. (8) The best varieties of clematis, and the best methods of treatment.

Mr. Wellington, of Toronto, read a very valuable paper on the subject of clematis, and was accorded a hearty vote of thanks therefor. This paper will be published in full in the Annual Report.

Mr. Saunders spoke of the wild yam, having beautiful foliage, as a climbing vine. Mr. Arnold mentioned the Duchman's pipe, wistaria and trumpet flower as hardy climbing shrubs.

Mr. Wellington said the *Amelopsis Vetchii* was a good climber.

Mr. Beadle was favorably impressed with the honeysuckle as a climber. Sweet-scented honeysuckle was quite hardy, and bloomed all through the season.

A. D. Allan, of Goderich, presented the report of the committee on fruits. Owing to the lack of space it is impossible to give this interesting report, which deals with a very large number of fruits, and makes the point that cranberries, provided suitable ground is had, are an extremely profitable crop. Also that the Corinthian grape, which makes the currant of commerce, had been raised in Ontario, and suggests that it be further experimented with, as a new commercial industry might thereby be opened up.

Mr. Morris, of Fonthill, presented a report, in which he spoke very strongly in favor of the Pocklington grape, which he is cultivating, and said it was a seedling of the Concord, strong grower, sweet, good keeper, with large bunches.

The ninth question, "Are there any Canadian wild flowers worthy of cultivation in our gardens that have not been introduced," was next discussed.

Mr. Saunders recommended the Liverwort or *Hepatica*, which was a very pretty early flower. Following was the Bloodroot, a pretty white flower, valuable for its foliage. Again, we have the Phlox, free bloomer and of pleasant perfume. The Dog-tooth Violet was a pretty flower, early and elegant in form. Another pretty flower was the Black Cohosh, a very showy plant. Again, we had the *Lobelia*s.

Mr. Arnold would like Mr. Saunders to cross the European and American *Hepaticas* and present the members of the Association with a plant. He was a great admirer of the Harebell.

Mr. Saunders also recommended the common blue violet.

Messrs. Saunders and Beadle said that they believed many had tried to grow the Trailing Arbutus in gardens and had failed, as it needs a peculiar kind of soil. It is found in Nova Scotia and New Jersey.

The next question taken up was, "Which are the five best and most profitable varieties of potatoes?"

Mr. Arnold mentioned Brownell's Superior, Dempsey, Rose, Climax, Ruby and Eureka. Some potatoes would thrive one year and not the next. Few varieties were favorites more than two or three years.

Mr. Page would choose the Alpha for an early potato, the Beauty of Hebron, Snowflake, White Peachblow (which grows earlier than the Jersey Peachblow), and the Threble.

Mr. Jarvis said he had tried a great many varieties, but came back to the Early Rose.

The following committees were appointed to report at the next winter meeting:

On Fruit Packages—Messrs. Dempsey, Pettit and Smith.

New Fruits—Allan, Holton, Arnold and Smith.

Vegetables—Page, Croil and Taylor.

Ornamental Trees and Shrubs—Leslie and Arnold.

Roses—Beall, Dempsey and Beadle.

Hardy Flowering Plants—Gilchrist, Forsyth and Bruce.

Climbers—Wellington, Arnold and Saunders.

The subject of best peas was then taken up.

Mr. Arnold said that in selecting five varieties of garden peas it will be advisable to have them follow each other in season of ripening, and in my opinion the earliest and best of all peas grown on this continent is Bliss' American Wonder. This variety is a cross between those two grand peas so well known to most lovers of good garden peas, viz: McLean's Little Gem and that tall-growing, late, but delicious and productive old pea, Champion of England. The Wonder is very early and dwarfish and very good. Second in season of ripening is the Alpha. This is a very good early pea, but it is a tall grower and requires sticking; this in my opinion is a great objection. Third, McLean's Little Gem, a very delicious dwarf-growing productive pea. Fourth, Hayes' Dwarf Mammoth. This pea grows about two feet high, and if planted at the same time as American Wonder would ripen about three weeks later. It is a very large, delicious and pro-

ductive pea. Fifth, that grand old pea, Champion of England. If it was not for its rank growth and its sometimes being liable to mildew in very hot weather, it would have no superior in its season. It ripens about the same time as Hayes' Dwarf Mammoth. On good rich soil and sticks it generally bears good crops.

Mr. Saunders was an admirer of Mr. Arnold's pea. Mr. Jarvis favored the Champion of England. He had not had good success with dwarf peas. Mr. Beall thought Mr. Arnold's pea was a very fine one.

A general discussion was then entered into on various subjects.

Mr. Orr, of Wentworth, spoke on the subject of peaches and strawberries. He said it was likely peaches would fail them, and he wished for information concerning strawberries. The Secretary pinned his faith on the Wilson strawberry. The President, who is a large strawberry grower, cultivates the Wilson almost exclusively for market.

The Secretary moved a resolution that it is the opinion of the Association that it is desirable that the law protecting birds be so modified as to permit fruit growers to shoot such birds as the robin and cherry bird, when their crops are invaded by them. Carried.

Mr. Beall had believed an open umbrella fixed near the fruit an excellent thing till he tried it; on visiting this scarecrow, however, he found a dozen or so robins roosting under it. He thought, therefore, that this plan was a failure.

The President believed that live cats tied to a string at intervals would act as a good scare; he tried it, but the dogs scared the cats more than the cats did the birds.

#### RASPBERRIES.

The President found in his part of the country that the Philadelphia berry was the most hardy. Herstine did very well. The Secretary said that the great defect of the Philadelphia was a peculiar dingy bloom on them which gave strangers the idea that they were mouldy.

#### PEACHES.

Mr. Orr, when he first started fruit growing, had intended to lay out twelve acres with peaches. He did not then know anything of the yellows. He had since been much discouraged by this disease. In his district the majority of orchards around were much affected by the yellows. He was told that clay land was preferable to sand. The Early Canada was a fine peach and doing splendidly; it was not,

strictly speaking, a clingstone. His Stump the World was an excellent fruit, pure and clear, and very good for canning. Mr. Woodward said the Salway was a very late peach, ripening two weeks after any others. He had eaten them as late as the middle of December. Mr. Orr had shortened in his trees on a rich, strong soil; it was found advantageous when the growth was heavy. The Secretary said that shortening in was found a great improvement in the Niagara district. It made the fruit larger in size and better. It made a difference in the color of the fruit by admitting the sun and air. He believed that the region of the peach could be extended by growing seedling trees from seed ripened as far north as possible.

The next meeting will be held at Owen Sound, on the 24th of August, 1881. This region is noted for its great crops of plums, and it is hoped that there will be a large attendance of members from a distance, who will receive a most hearty welcome from the members at Owen Sound.

### WOOD ASHES vs. PEAR BLIGHT.

BY G. R. MATTHEW, CLINTON.

One of the fruits which attains its finest development in our favored Huron tract is the pear. I purchased a bushel of Bartlets on the street here which averaged nine inches in circumference, many of the specimens attaining 12 inches, some even 13½. Other varieties flourish correspondingly. The largest Seckels I have ever seen were from a farmer's garden in this neighborhood, and the Flemish Beauties are prodigious.

Yet this fascinating cultivation has its drawbacks. We are not exempt from the visitations of the dreaded blight. Some seasons it is rarely seen; last season it was peculiarly prevalent and destructive. This outbreak of the disease most feared by the pear grower seemed to bear out the remark of Downing, that the predisposing cause is to be looked for in the season previous, and that attacks of blight may be expected the summer after a sudden and early winter has succeeded a damp and warm autumn. These conditions had been exactly fulfilled to the late attack of blight. Three-quarters of the month of October had been summer weather here, the mercury averaging 80° in the shade at noon, and all vegetation showed a disposition to make second

growth. On the 23rd the temperature stood at 75°, and on the 24th it was bitterly cold and snowing. The rest of the month we had freezing weather. Apparently as a consequence of all this, scarce an orchard or garden in this section escaped the blight last summer. The Flemish Beauty of course suffered most. Many trees in their prime were nearly destroyed. Bartlets and Seckels went almost unscathed.

In my own garden not one of sixteen trees, embracing both dwarf and standard, were touched, while just over the fence in all directions were blighted trees. I have been casting about in my own mind for a reason for this singular exemption. It was not that my trees were of varieties not subject to blight, for among them were several Flemish Beauties. It was not that they were too young, (though they have hardly begun to bear,) for elsewhere were trees as young or younger blighted. It was not because they stood in cultivated ground, for in garden and sward trees suffered alike. It was not that my soil was drier and more congenial, for it is not underdrained. The only difference of which I am aware in the treatment of my own and the surrounding trees, is that mine have regularly received the caustic ashes from the household fires. These have been scattered to the extent of a scuttleful at a time around each tree, and the process has been repeated several times in the year. Is this the cause of my exemption from blight? While aware of the danger of insufficient data and hasty generalization I can conjecture no other. If unleached ashes are, to some extent at least, a prophylactic against the blight, how do they act? Not, I apprehend, as a specific antidote to the poisonous virus. Is it not rather that they engender such a healthy habit of constitution that no appropriate nidus for the baneful germs of the blight is found?

I present this case with all diffidence, presuming upon the invitation you have extended to your readers to send communications on matters of common interest, and hope that it may serve to elicit the views of more experienced readers of the *HORTICULTURIST* upon this vexed matter.

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There is much work to be done in the fruit garden that may be preparatory to the busy time of spring. All such work as the getting ready of the trellises and supports of grape vines, raspberries, etc., may be done now with great advantage.

## THE BERBERRY FOR HEDGES.

BY H. QUETTON ST. GEORGE.

About berberry as hedge plants, I still adhere to my opinion that ultimately they are the best. They require a little protection from cattle for two or three years, principally in spring, when the tender shoots are greatly relished by sheep, and they come on very slow if the grass is allowed to grow over their roots. After two or three years the plants in ordinary soil are strong enough to defy the attacks of cattle or sheep, and the grass seems to have very little effect on them, their roots striking very deep in the ground. They stool very freely, and if planted one foot apart very soon close so as to prevent pigs or other animals from going through, whilst they interlace above so that cattle cannot see daylight, and do not attempt to get over or through them. They will generally attain a height of from six to seven feet in three or four years—I mean plants taken from the nursery two years old. Strong suckers will often shoot as much as four feet in one season. I have now several miles of them here, and prefer them to any other plant for hedges in dry ground; in low, marshy soil I found they would not do.

I have also some buckthorn, but I find it very troublesome to clip their strong branches every year, and as the sheep are very fond of nibbling their leaves as high as they can reach, I find it very hard to keep them close near the ground unless they have been planted very thick, and in that case the plants are never very strong to run up. I would say that the great points of the berberry are growing so thick and strong near the ground and requiring no clipping or care of any kind when once well established, which takes about three years. Considering the great scarcity of timber, and the trouble and expense of wire fences, I would strongly recommend planting berberry, wherever the soil is not too wet. In marshy places a cedar hedge planted alongside of a picket fence, which it soon embraces and supports, makes a very strong barrier and a most valuable screen or shelter from the wind.

As will be seen by a perusal of Mr. St. George's article, he claims advantages for the berberry which cannot but induce the attention of even the most prejudiced. In the berberry we have a *permanent fence*.

## CORRESPONDENCE.

## MCINTOSH RED APPLE.

I send herewith a sample of the above apple, which promises to be the best winter apple I know of for this and other cold sections. It is a native of Dundas, our neighboring county. I have seen the parent tree, which was taken from the roadside on the edge of the timber with nineteen or twenty more and set in the garden of Mr. Allen McIntosh, then owned by his father, some eighty years ago. All the rest of these trees have been dead for thirty or more years. The old tree is as bright and smooth as a young tree and still bearing. After a description of the Wealthy apple, Dr. Hoskins, of Newport, in the last Montreal Horticultural Society's Report, speaking of the McIntosh Red, says: "Here is a larger and apparently longer keeping apple that is hardier than the Fameuse. I am rather astonished that this variety, originated as it did in Canada, should never yet have appeared upon the tables of the Society's exhibitions. Mr. Aaron Webster, of East Roxbury, Vt., calls it a glorified Fameuse, with the color and quality of that variety. A doubled size, a hardier tree, and the same defect of 'spotting' in unfavorable seasons." I exhibited a poor sample of the fruit at our winter meeting of 1880, when, although it was only classed third rate, I had no hesitation in recommending it as one of the best for cold localities. The tree is perfectly hardy, a vigorous grower, and the fruit keeps well till April. The owner of the original tree says he remembers it well for fifty years, and that it has never missed in a single year, frost or no frost, to bear a good crop of apples.

JOHN CROIL, *Aultsville.*

NOTE.—The apple came to hand in a very damaged condition, the package well smashed and the apple likewise. It had been a beautiful apple in appearance, of large size and high color. The flavor was "good." It deserves special attention in northern localities.—ED.

NUT PLANTING.—In answer to D. B. Hoover's question in regard to nut planting, I would state that if there are no squirrels to dig them up I prefer to plant the nuts in the fall, just before the ground freezes. If, on the contrary, there is danger from the squirrels, after having gathered the nuts and hulled them, place them in a pile before they become dry and cover with four or five inches of earth. In the spring, as soon as the frost is out of the ground, plant where you want them to remain. I find that by transplanting nut trees there is danger of injuring the tap root, thereby destroying the growth of the tree for two or three years. The larger the nuts used for planting are, the larger and stronger your trees will be.—JONAS NEFF.

## CAUSE OF BAD FLOWER SEEDS.

BY N. ROBERTSON, GOVERNMENT GROUNDS, OTTAWA, ONT.

Many are the complaints made about seedsmen selling bad seeds; I sow hundreds of papers of them every year from different seedsmen and collectors but very rarely find them bad, even with the most minute seeds. There are two great causes for this failure, and the directions that I give, if attended to, will obviate the necessity of seedsmen inserting such clauses in their catalogues as that they will not be responsible for failures, and will also save them much annoyance.

In this section (Ottawa) it is time enough to make a hot-bed the last week in March or first of April. Sooner than this for half-hardy annuals is of no advantage, as planting out is not safe before the 24th of May, and should not be done before the first of June. Usually at this time of the year we are free from night frost and the cold, bleak winds of early spring. I shall suppose your hot-bed made of horse manure, heated and well mixed, the fresh with the more rotten, so that your bed will sink evenly, having the box fitted to within six inches of the top (don't leave it like a cellar). In a few days the bed will be warm enough to receive the soil, but if not sufficiently heated, a bucket of warm water will greatly facilitate matters. Put the soil close to the sash; if you have no prepared soil put in the frozen lumps, they will soon thaw out and leave you a nice pliable soil, in fact better than you can get in any other way. Allow the steam to escape by raising the sash. The prevailing method is to dig below the frost for material for the hot-bed, thereby getting poor wet soil, which bakes so hard that it is impossible to remove plants without the destruction of the roots. Always add sand enough to keep the soil open.

When your soil is warm rake it smooth, leaving it four inches deep. Place on the inclined sash, which should be made very sloping, in order to run off the water easily and prevent dripping inside. You will probably have more soil than wanted, which it would be well to sift over the entire surface of the bed half an inch deep. Pass a straight piece of board over the surface, drawing it level, leaving the surface uniform and smooth.

To form the drills, which should be three inches apart, take a lath or some such piece of wood the length of your bed inside; sharpen a little by taking off the corners. Press the narrow edge into the



soil according as you want the drills for the size of the seed; if fine, just mark; for larger ones make the indentation deeper; this has the advantage of leaving a nice even bottom, so that none of the seeds are lost. After sowing the seed, again take the sieve and sift lightly over the grooves, and with a trowel fill them level by passing it crossways over them. In sowing, attention should be given to those seeds that will germinate in the same time, such as Phlox Drummondi, Zinnias, Asters, &c. Succulents, such as Portulaccas, Mesembryanthemums, &c., keep to one side, or where they will be in such a position that they can get plenty of sun, and when watering as little water as possible.

Now comes the time when most bad seeds are made. The general plan is to allow the sun full force into the frame, and try to keep the soil wet by continued watering. Neglect for one hour to keep the soil damp at a time when the seeds are germinating is fatal; besides, a hard crust forms on the surface on account of the frequent watering. The plan I follow is to cover up the frame in such a way that the direct rays of the sun are not admitted. Seeds will germinate as well in the dark as in the light. As soon as they are up remove the shade, throwing a few spruce branches over as a partial shade for a few days. If steam occurs allow it to escape by raising the sash on the sheltered end in the heat of the day; if this is not attended to you will have it damp, and lose your plants. Here again you will find the advantage of placing seeds together that will germinate at the same time, as you can still keep those partially covered that have not yet come up. If you attend to these directions your seedsman will always have good seeds, and you will be made happy by success.

In transplanting into another frame before putting them outside, (which should be done in all cases,) if you have not another frame make a bottom of warm manure, box it around so that it will stand well over plants of a good size. Put soil on the top of this, deeper than directed for hot-bed; nail a few strips across so that you can cover with boards in case of frosts or cold winds, which we generally have in the month of May. This plan I prefer to planting again into a frame, as the plants are hardier and receive little check on planting out.

The other cause of failure more generally belongs to outside sowing, which I will treat in another number, with transplanting, bedding, &c. I would not advise seeds to be bought in distinct colors—you can get some mixed, ensuring greater variety at a much less expense.