



THE

CANADIAN

Horticulturist.



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The Canadian Horticulturist.

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[NO. 12.

THE POCKLINGTON GRAPE.

So very various have been the opinions expressed with regard to this grape, that until now the writer confesses to considerable perplexity with regard to its qualities, having heretofore only seen it as it was exhibited some years ago at the meeting of the Am. Pomological Society in Rochester, N. Y. At that time the fruit was not fully ripe, so that no just judgment could be formed concerning it; and the impression left on the mind would not be the most favorable, for exhibitors are not in the habit of presenting a new thing to the public in an imperfect condition. It was with much satisfaction that we embraced an opportunity of visiting the grounds of Mr. John Charlton, in Rochester, N. Y., about the middle (14th) of October, where there are a number of vines of the Pocklington, and which at that time were well filled with fruit. This visit gave us an opportunity of observing the condition of the foliage, the bearing habit of the vines, and the quality of the fruit, as it appeared not upon one vine merely, but upon some twenty vines or more.

As to the foliage and general appearance of the vines, there was evidence of strong, robust constitution; a thick and leathery leaf that would endure well the trying changes of temperature, of drouth, and moisture, to which vegetation in our climate is so subject; a strong cane, not as stout as that of the Brighton of the same age, but vigorous, well ripened, and of sufficient length to indicate that the vine is a strong, healthy grower, and at the same time not so long jointed as to need great breadth of space for favorable results. The crop of fruit was abundant, quite enough one would say for the vines, though Mr. Charlton stated that a considerable quantity had been already cut off, so there is no reason to fear that the vine is not abundantly productive.

The fruit is showy, commanding attention by reason of the large size of the berries and good size of bunch, and when fully ripe is of a light yellow color in the berries exposed to the light, changing to a greenish shade on the other parts of the cluster. The attractive appearance of the fruit will doubtless give it a prominent position as a market variety. In flavor it compares favorably with other varieties which show the characteristics of the Labrusca family; it is sweet, rich, and possessing the peculiar musky, or, as it is sometimes called, "foxy" flavor, which marks the Hartford Prolific, Diana, and to some extent is also present in the Concord. The berries were hanging well to the cluster on the vines, giving no evidence there of any tendency to drop from the bunch when ripe, like the Hartford Prolific.

The colored lithograph which embellishes this number, is presented to our readers by Messrs. Morris, Stone & Wellington, who have done so much in the way of introducing this grape to Canadian fruit growers. In size, both of bunch and berry, it is a good representation of the fruit, and the color is probably as accurate as can well be produced in chromo-lithography. We did not see any bunches where the berries were as uniformly yellow as in the plate, more or

less of them having a greenish tint on the shaded side. It is probable that in the colder parts of the Province that tint will be found to predominate even when the grape is ripe.

We look upon this grape as worthy of trial in all those sections at least where the Concord will ripen. To those who are fond of the musky flavor of our Labrusca grapes, combined with much sweetness, large size, and showy appearance, this variety will be a welcome addition.

ANOTHER SEEDLING GRAPE.

We received from Mr. C. H. Biggar, of Drummondville, samples of a new seedling grape raised by him—parentage unknown. The grapes were received about the middle of October, and as stated in the letter accompanying them, were over-ripe. In size they were a little larger than the Delaware, and deeper in color, but in many respects resembling the Delaware in appearance. We were favorably impressed with the quality of this grape, and hope that we may see it again another season when in its best condition. Mr. Biggar states that it was in its prime about the 24th September, and that the vine gives promise of being a very heavy cropper.

GRAPE GROWING IN THE OTTAWA VALLEY.

BY P. E. BUCKE, OTTAWA.

The vine industry, which had no existence in this country twenty years ago, and has now taken such a hold on our brethren of Western Ontario, has only within quite a recent period extended itself so far east as this locality. It was confidently believed for a long time that if many kinds of the apple would not successfully flourish here, it was useless attempting this more tropical production of one of nature's choicest gifts. The fact was either lost sight of, or else not understood, that whilst the peach, the plum, the pear, and the apple grew on trees with stiff stems, the grape was produced on a pliant limber vine, and that this makes all the difference in the cultivation of the one and the other. It is found that the sun heat of the Ottawa valley during the summer months is quite equal, if not superior, to the more western peninsula; and that by securing a southern exposure there is not the slightest difficulty in ripening not only the ordinary hybrid outdoor varieties of grapes, but also some of those native to France, Spain and Italy, and even others which it has hitherto been thought would only ripen with favorable circumstances under glass. One of the secrets of vine growing in localities where seasons are rather short, is the securing of the vine from severe weather during winter, and the keeping of the sap vessels from freezing and thawing during spring by protecting the plants with a few inches of soil before the ground closes up in autumn, which covering should not be removed until the spring is fairly open; the early maturity of the vine-wood, which ripens with its fruits, and the season at which it begins to put forth its leaves in the spring, gives the cultivator every opportunity to treat the vine successfully in these respects.

The vine is one of the most docile of plants—it can be trained and pruned in any direction; it may be grown tied to a stake or spread out like a fan, care being taken that all the main pruning be done in the autumn. No cutting of any kind must be attempted in the spring, before the first leaves are open, with the exception of rubbing off the duplicate buds which burst along the previous year's growth. Summer pinching and pruning may be freely indulged in, and neither too much wood or too heavy a crop should be allowed to remain on the plant, as a redundancy of either has a tendency to delay the ripening of the fruit, which it is necessary to mature as soon as possible, so as to escape the early frosts, which are injurious to most of our cultivated varieties. One of the most successful growers in this section it is understood took twelve first prizes and two second out of a possible fourteen, at the Montreal exhibition last September. The same gentleman has visited exhibitions in Toronto with nearly as great success. This demonstrates that the vicinity of Ottawa is quite equal if not superior to any other part of the Dominion, either east or west, for the growth of this delicious fruit. It is believed that the best localities for the vine have not yet been brought into cultivation; the rocky foothills and upper southern slopes of the Chelsea mountains, near Ottawa, contain many hundreds of acres which though unfitted for cereal crops, owing to the rocky nature of the soil, might by careful selection and terracing, be found most suitable for vineyards.

It is understood that several gentlemen have purchased and planted, or are about to plant extensive vineyards close to the city; but there is no reason why any good situation convenient to a railway should not be quite as favorable for market purposes.

One thing is very evident, that the rapid extension of the vine will lead to the production of wines here, as has been the case about Toronto, Hamilton, and other western cities. This however is not looked upon as an unmixed evil, as it is generally conceded that the population

of vine-growing countries are amongst the soberest of nations. Within the past few weeks a cablegram has been received from France, stating that a meeting has been held at Bordeaux, at which the Mayor was present, for the purpose of forming a syndicate, with the view of transferring to Canada some of the wine establishments so largely carried on in that country—the ravages of the *Phyloxera* being so serious that the cultivation of the vine is becoming year by year more difficult. It appears that this insect does not attack the roots of the native American grape; and some experiments have been made by importing the Canadian wild fruit seeds, and grafting the seedlings raised from them with the wine-producing plants; but although the grape is one of the easiest woods to graft below the soil, it does not readily unite when the operation is performed above ground; the consequence is, the scion takes root, and being a stronger grower than the native, the ends sought to be obtained are found abortive; and it is now decided to examine the Canadian grape with the view of seeing what can be done with them by applying the accrued wisdom and experience of the French vintners to their manufacture into wine. The speedy prospect of Ottawa being a great railway centre; her easy access to the head of tide-water by the Quebec, Montreal and Ottawa Occidental Railway or other easterly route, would point to this locality as a desirable point to direct the attention of the French delegates when they come to “spy out the land,” which will probably be the case next spring. And it is trusted that the Governments of Ontario and Quebec, and the Dominion will all three unite in placing matters in a proper light before them, at the same time securing the most suitable guides to show them over the country, and advise them as to the best localities for future operations.

The French Commissioners were favorably impressed at the Philadelphia Exhibition in 1876, with the grapes there displayed by the Fruit Growers’ Association of Ontario, although these specimens passed over several hundred miles of railway during exceedingly hot weather. The fruit would have been much more attractive had it been seen on the vines at the points where grown.

The writer is well acquainted with many of the grape growers around Ottawa, and he has yet to learn of a single instance of any of them who have failed in securing good paying crops where ordinary skill and intelligence have been exercised; at the same time, ninety-nine out of every hundred engaged in the business are extending their plantations and securing as far as possible any new or other varieties for trial which they do not possess, whilst others are rushing enthusiastically into the field to add their quota to this new yet fascinating Canadian enterprise.

Every year brings forth new and sometimes better varieties; these are being produced by our Canadian and American hybridists, so that the grape list is being constantly extended and improved, both in quality and earliness of ripening. This leads one to the conclusion that the possibilities of grape culture on this continent, and more especially in this section, are practically unlimited; and it is predicted that our vineyards before fifty years, perhaps twenty, will rival those of sunny Italy or La Belle France, and wherever either farm cottages or suburban residences are dotted over the land, the vine will be found as one of the necessary accompaniments of health and civilization.

The business of shipping grapes in the fresh state to the markets of Britain has not yet been attempted, but when this fruit becomes more plentiful, and as shipping facilities are more extended and rapid, shippers will not lose sight of this branch of the grape industry.

THE POCKLINGTON GRAPE.

DISCUSSION AT THE MEETING OF THE AMERICAN POMOLOGICAL SOCIETY, IN BOSTON, SEPTEMBER, 1881.

George A. Stone, of Rochester, N. Y., said: As most of you know, the Pocklington originated at Sandy Hill, Washington county, N. Y., not supposed to be a grape section. As it is grown in Rochester on light soil, I think it ripens a little earlier than the Concord. This year the Concord did not set well where the Pocklington set very perfectly. In fact the vines were overloaded. In quality we claim that it is as good as the Concord in its best state. The growth of the vine is good, but it cannot be called an extra free grower. I have not discovered any mildew or any disordered condition. Its cropping quality certainly is all that can be asked. It will bear as many grapes as any other variety, and mature them. I think it is a very promising new grape for vineyard planting.

H. E. Hooker, of Rochester, N. Y., says: I think Mr. Stone has very accurately described the appearance and condition of the Pocklington in Rochester. The vines most exposed to the weather seemed to maintain a perfectly healthy foliage, so I think there can be no question about its being ironclad in respect of foliage. Last season I saw the Pocklington fully ripe at Rochester, and was very agreeably disappointed in its quality. It was to my taste fully as good, sweeter, and a little more sprightly than the Concord.

The President: What time last year?

H. E. Hooker: It ripened fully as early as the Concord on the adjoining vines. It was September 16th. Last year was a pretty early season. It is not to be classed with the earliest grapes, but sufficiently early for all practical purposes, in any locality for market. It is certainly remarkable for the number of handsome bunches produced on a vine. I think it is not claimed for it that its quality is of the highest excellence, but it is what would be called very good for quality.

T. S. Hubbard, of N. Y.: I was in the vineyard at Rochester four or five weeks ago, and it certainly was a very fine show of Pocklingtons, the first year of bearing. I was agreeably disappointed in seeing them. The vines looked very well, were making a good growth, and the fruit all that could be asked. I have some vines growing the second year that are very healthy, not as vigorous in growth as the Concord, but fair growers.

George W. Campbell, of Ohio: My experience agrees with that of Mr. Hubbard.

The President, M. P. Wilder, of Boston: I had fruit sent to me twice last year from the original vines, and I was surprised at its beauty. You may recollect that in my address I alluded to it in connection with the wonderful effect of hybridization, whether by the hand of man, by insects, or by the air. I say that the Pocklington may be the beginning of a race of grapes equal in beauty and perhaps in excellence to the Cannon Hall Muscat. I think it is a most promising variety, and although I would like to ameliorate the flavor of the Pocklington a little, still it is a wonder in its way.

REPORT ON FRUITS.

Henry Paffard, Esq., Niagara, writes: "I have not fruited the Burnet Grape yet, but expect to do so next season. Until last year I did not find it a free grower, when it made rapid progress. It is too soon to say anything about the Diadem Raspberry, sent out last year. That welcome visitor, the HORTICULTURIST, is received regularly, and will assist in keeping alive an interest in horticultural matters, a work that your valuable Association is doing so much to promote."

THE GREENFIELD PLUM.

The following description of this plum is from Mr. A. Gilchrist, Guelph:

"The plum came to hand in good order, and was much larger than I expected, quite the size of a well-grown Lombard, as far as I could judge. Fruit medium; color yellow, nearly covered with light crimson; suture shallow, roundish oval; stalk about one inch long, slender, in a narrow cavity; flesh yellow, coarse grained, juicy, being more acid under the skin. Cannot judge of the quality, as it was not in condition; parts freely from the stone. I have no doubt it will prove valuable in the North-west."

This plum, it is claimed, originated with Mr. Greenfield, of Ottawa, Ont. The tree has the style of growth and foliage of the Chickasaw plum. Your Editor has never seen the fruit. Mr. P. E. Bucke says that the tree is perfectly hardy at Ottawa.

REPORT ON PLANTS RECEIVED.

William Gray, Woodstock, Ont., writes: The Downing Gooseberry is a great success, free from mildew. The raspberry and strawberry plants received two years ago were a failure. My Flemish Beauty Pear is fine; the tree fruited last year, doing well; also the Clapp's Favorite Pear, which has fruited the last two years. The first year I allowed the fruit to ripen on the tree, which proved to be almost useless—rotted at the core, taste insipid. This season I picked the fruit as soon as it parted freely from the branch, and kept it for about one week in the house. A better pear I could not wish. Grimes' Golden Pippin Apple did not grow. Glass' Seedling Plum is growing fast, and is a very fine tree. It has fruited the last two years, but I cannot say much in its favor, I have so many other varieties that are much better. My Burnet Grape has not fruited yet. The raspberry I got from the Association last spring made a growth of five or six feet. I have given all the trees and plants a fair trial, and nearly all have been satisfactory. My soil is a very heavy loam, hard clay bottom, well drained and fed.

WINE MAKING.

A few words in answer to the inquiries of John Knowlson, Lindsay, about wine making. The method adopted by myself in making my own wine, which is pronounced very good by those who have tasted it, is as follows: As soon as the grapes are ripe, pick them carefully and clean from leaves or dirt. Reject all unripe or damaged fruit. Keep the fruit in a cool, dry, airy place for

a few days. Then run them through a mill, and press them so as to abstract all the juice. Strain it into wood, stone or glass vessels. Glass carboys, holding 12 or 13 gallons, are very good. If the fruit is acid, put from one-half to one pound of sugar per gallon; let it ferment say from one to three weeks—you must be your own judge as to the time. Then put it away in your cellar and leave it until the next spring; draw off and bottle. You can sweeten to your taste, but I think you will find it sweet enough. I have always succeeded in the way mentioned, and have made yearly from 12 to 20 gallons, enough for myself and some to give to my neighbors in sickness or otherwise. I have some that is seven or eight years old. It is not really ripe until five years of age, and then it is fit for a king. Some will say it is too long to wait. I answer, if you want anything good, you must abide the time necessary for it to mature.

FIG CULTURE.

Dr. G. F. Needham, of Washington, D. C., writes: Last September I received an enthusiastic letter from Mr. Thomas D. Lloyd, of Barrie, Ont., from which please allow me, for the benefit of your readers, to make a brief quotation:

“In the spring of this year I received from you 12 young fig trees. Ten of them have grown from two to three feet, with several branches, and to my surprise are already producing fruit.”

I would be delighted to send my pamphlet, “Fig Culture,” to any address enclosing 10 cents. The whole subject of fig culture, and how to preserve the fruit for home use and the markets, is plainly discussed. The *California Farmer* says of my little treatise: “Very valuable, and everybody should have it.”

THE ROT IN TOMATOES.

Our thanks are due to Mr. W. E. Wellington, of the firm of Morris Stone & Wellington, for a copy of the *Gardeners' Chronicle*, Nov. 12th 1881, from which we copy the following paper on the Fungoid Diseases of the Tomato, by Charles D. Plowright, King's Lynn, England. This paper will probably fully answer the inquiry of Mr. Thomas Coates, in the November number:

During the autumn of last year (1880) I carried on a series of investigations concerning the various fungi which deleteriously affect the Tomato, having the opportunity of examining any and every diseased specimen of Tomato which occurred in a large Tomato growing establishment near King's Lynn.

Tomatoes grown in the open air in this country are a very uncertain crop, sometimes proving a very profitable venture, but not unfrequently the reverse. The Tomato disease is almost as well known to gardeners, and as much dreaded by them, as the Potato disease is. A very large number of outdoor diseased Tomatoes were examined by me last year. The appearance of diseased Tomatoes is so well known that it is almost unnecessary to give any description of it beyond stating that they have a peculiar bruised look, and are more or less mottled with black or dark brown patches of disease. These patches increase in size after the fruit has been gathered to such an extent as to render it valueless. If the Tomato be examined in this state he must indeed be an acute mycologist who could demonstrate the fungus which has caused the disease, for, bearing a few hyaline mycelial tubes permeating the substance of the fruit in and towards the margins of the spots, nothing adventitious can be detected. At any rate, I was quite unable to find any perfect fungus upon the numerous specimens I then examined which could with certainty be credited with causing the mischief. This is not to be wondered at when it is remembered how rarely we are able to discover the perfect *Peronospora infestans* upon the diseased tubers of the Potato. On September 10 of this year a specimen of a typically diseased Tomato was brought to me with the information that although the Tomato was diseased the plant which had produced it was healthy. I at once visited the spot and examined the plant in question. Sure enough the Tomatoes on it were diseased to a large extent, but the plant looked healthy. A few dead-looking spots were observed upon the lower leaves, which were examined with a pocket lens, but not very thoroughly, as it was raining at the time. When, however, these dead-looking spots were examined microscopically, they were found to be due to the presence of *Peronospora infestans*. The fungus was not producing its conidiophores very abundantly, but still there it was without doubt. The central portion of the spots where the *Peronospora* first made its appearance were now nearly free from it, it being more or less confined to the circumferential portions of the spots. The appearance of these spots was quite unlike the spots produced by the same fungus upon the Potato leaf. On the Tomato leaf the spots lack the black rotting look which is so characteristic of the Potato disease. The Tomato leaf is larger and harder, so that instead of putrefying it rather dries up; the spots themselves look more like the sun-scalds one sees upon the leaves of plants grown under glass. After diseased Tomatoes have been gathered a short time decomposition rapidly sets in, and they then harbor an incredible quantity of fungi. But as these fungi are, as a rule, only such as are found upon almost all decomposing vegetable matter, it is useless to enumerate them. One species, however, seems to me worthy of special note, as when it appeared upon a Tomato the latter underwent very rapid decomposition. The fungus is, I believe, an undescribed species of *Sphæronema*; it may be thus described:—

Sphæronema lycopersici, n. sp.—Perithecia minute, spherical, arranged somewhat

concentrically upon the surface of diseased Tomatoes. Each perithecium surmounted by a dirty flesh-colored globule of spores. Spores minute, cylindrical, or somewhat sausage-shaped, hyaline, either with or without nuclei. On outdoor Tomatoes, Clenchwarton, King's Lynn, Oct., 1880. Perithecia about 150 mk. in diameter. Spores 10 by 2-3 mk.

The diseases of the Tomato to which I have given most attention, however have been those peculiar to fruit grown under glass. It is worthy of remark that the *Peronospora* disease does not occur under these conditions; at least if it ever does do so it is very uncommon.

The first and most important disease to which I would call attention is of frequent occurrence, and may be termed for distinction's sake the "black spot." It makes its appearance usually (but not invariably) upon the green Tomato as a circumscribed brownish spot of no great size upon the crown of the fruit, usually near the remains of the style. As the Tomato ripens the spot has a whitish hue from the semitransparent dead cuticle of the fruit, which is at this time unaffected with any fungus growth, being simply dead. Specimens of this disease have been submitted to more than one horticultural journal, and pronounced to be "sun-scalds." This, however, they cannot be, for the spots of disease are upon the crown of the fruit, which hangs downwards, so that any sun-scald would be upon the base of the fruit, which is uppermost. I have seen numerous specimens *in situ*, and can therefore speak positively upon this point, as it might be suggested that the primary lesion was due to a burn, and that the fungus afterwards attached itself to the injured spot. As the Tomato ripens and assumes the beautiful red color of maturity, the spot, which varies in size from 3 to 10 millimetres, acquires a jet-black color. If a section be now made through it, it will be found that this blackness extends inwards towards the centre of the fruit, to a much greater extent than is apparent from the exterior. It is distinctly defined and harder than the parenchyma of the fruit. If a portion of this black substance be examined microscopically, it is found to consist of an assemblage of black mycelium compacted pretty closely together, having the appearance of the mycelium of the *Demati* or black moulds. Upon the upper surface—the black spot—four fungi are found; one a true black mould, the other three polymorphic states of a *Phoma*. The black mould may be thus described:—

Sporocybe lycopersici, n. sp.—Tufts olive-green, flocci erect, twice or thrice septate, about 5 mk. in diameter. Heads terminal globose, 20-30 mk. across. Spores numerous, sub-globose or ovate, black, 3 mk. long.

The *Phoma* is preceded by conidia and macroconidia.

CONIDIA: *Cladosporium lycopersici*.—Hyphæ tufted, septate, irregular in outline at their apices, springing by their bases from a black spot; compacted mycelium, spores abundant, cylindrical, black, 1-3 septate, slightly pointed at their extremities; 10-30 mk. long, by 8-10 mk. wide.

MACRO CONIDIA: *Macrosporium lycopersici*.—Flocci, well developed, black, septate, somewhat flexuous, producing abundantly sooty-black irregular pyriform to sub-quadrate muriform spores, which vary in size from 10-70 mk. long, by 10-20 mk. wide.

STYLOSPORES: *Phoma destructiva*.—Perithecia carbonaceous, minute, globose, spherical clustered spores, hyaline, oval, cylindrical, binucleate, 5-6 mk. long, by 1.5-1 mk. wide.

Another disease which sometimes but much more rarely attacks Tomatoes while still growing is due to a *Dactylium* very closely allied to, if not identical with, *D. roseum*, B., from which it differs in producing its spores in threes, and in growing parasitically upon a living plant. This disease seems more especially to affect that variety of Tomato known to gardeners as the Trophy, and commences upon the base of fruit, near the attachment of the stalk.

Dactylium lycopersici.—Forming a dense floccose whitish pink mass, spores hyaline, with a tinge of pink, oval or ovato pyriform, uniseptate, often apiculate, produced in threes upon the terminal extremities of erect sparsely septate hyaline hyphæ.

APPLES IN COLD CLIMATES.

Orchardists living in the colder parts of Canada will be greatly interested in the following valuable article, contributed to the *Rural New Yorker* by Dr. T. H. Hoskins, of Vermont:

My orchard is on the shores of Lake Memphremagog, six miles south of the international boundary line, in latitude 45 degrees north, and is elevated 750 feet above the sea level. This territory lies fully open to the sweep of polar waves of low temperature, and there are no winters in which our thermometers do not frequently register temperatures lower than minus 30 degrees. Fifteen years ago when I began to plant an orchard, it was believed to be impossible to grow any kind of apples except the Siberian crabs in this section of Vermont and the adjoining parts of Canada. Many thousands of dollars had been expended in vain by our people for the purchase of fruit trees from southern New England and Central New York. It has been proved at a heavy cost that the standard apples of the great apple regions to the south and west of us cannot be grown here. So far as I am aware, no tree of the Baldwin, Rhode Island Greening, or Roxbury Russet ever lived to reach bearing age in North-Eastern Vermont. Even such hardy kinds as Westfield Seek-no-Further, Blue Pearmain, Tolman Sweet, Fameuse, and Red Astrachan, succeed only locally and precariously, so that they cannot be grown profitably for market.

The task which I set myself fifteen years ago was to test every hardy sort I could hear of and obtain, in order to see whether varieties did exist which could be planted here and in similar exposed localities with security. I have accomplished the work, after testing over 250 varieties, collected from the coldest localities in America. The result is that this part of New England, from having not a single variety of apple (outside of the crabs) which the people had confidence to plant, is now rapidly becoming a region of orchards unsurpassed in any part of the country for vigor or fruitfulness.

TOO TENDER.

In the first place I will give a mere list of the varieties which have been utterly "wiped out" by Jack Frost. These embrace the Williams' Favorite, Yellow Bellflower, Black Oxford, American Summer Pearmain, Red Canada (not a Canadian apple, notwithstanding the name), Morgan Sweet, McClellan, Grimes' Golden, Gravenstein, Granite Beauty, Fairbanks, Ramsdell Sweet, Canada Reinette (not grown in Lower Canada to any extent), Franklin Sweet, Fall Orange, Summer Hagloe, Colvert, Munson Sweet, Golden Sweet, Jewett's Fine Red, Fall Pippin, Moses Wood, Minkier, Mamie Cathead, Cooper's Market, Yellow Ingestrie, Whitney Russet, besides quite a number "not in books." It will be noticed that there are many sweet apples in this list. My experience is that, as a rule, this class of apples is more tender than others. There are very few to be found in the Province of Quebec; so few, indeed, that the people have no taste for them, and they are not saleable in the markets of the large towns. Now come the

"ALMOST HARDY,"

the most vexatious of all, because they neither thrive nor die. Some of them, indeed, do tolerably in favored spots, but none will do to plant extensively with a view to profit.

ST. LAWRENCE.—Around the city of Montreal and on the hills which rise out of the flat country between Lake Champlain and the St. Lawrence River, this beautiful and excellent Fall apple is productive and profitable. It is doubtless a Fameuse seedling (as so many of the Lower Canadian apples are), having a similar flavor and the same snowy-white flesh. Very few of these Fameuse seedlings do well in the more elevated country. Both parent and progeny develop the vice—inherent in them, but little seen under the more favorable conditions—of spotting, and to this the St. Lawrence adds cracking and shy bearing, together with some tenderness of tree. Not profitable here.

RED ASTRACHAN.—Tree tender; fruit smaller and less fair than in more favorable places. Not profitable.

FAMEUSE.—Bears young and well, but the fruit is not so large or so fair as at Montreal or the Champlain Valley, and the tree is plainly tender. Profitable, yet not safe to plant extensively.

BEN DAVIS.—Tree tender and short lived; fruit hardly “good” elsewhere, and no better here. Though a free bearer, not profitable.

POMME GRISE.—Tree tender, fruit small and knurly; not profitable, though the quality is fine.

NORTHERN SPY.—In protected spots this noble variety sometimes succeeds here as well as anywhere in the country. Our Spys took the first premium at the State Fair this fall. Nevertheless the tree is too tender.

RIBSTON PIPPIN.—Living at a poor, dying rate, it still bears well and bears fine fruit; but after a few years’ struggle gives up the ghost.

FALL WINESAP OF THE WEST.—A good little apple, just now (November) in eating, but the tree is not hardier than Ben Davis, and is not productive.

SAXTON STRIPE.—A fine flavored October apple; tree productive, but tender, and soon falls into a decline ending in death.

EARLY JOE.—Struggles along and bears some fruit, but survives only in an unhealthy state.

JONATHAN.—In the same category with Early Joe—the more’s the pity.

SOPS OF WINE.—The most successful of those not entirely so. The tree suffers from the winter, yet bears good crops and seems to get hardier with age.

TOLMAN SWEET.—This variety grows thriftily and bears well, and one would not for several years suspect it of wanting hardiness; but when it comes to full bearing, unless carefully propped up, it breaks down all round, and the breaks invariably reveal a rotten interior, with only a skin of healthy wood. Sorry to have to give up this excellent winter sweet. These two lists of complete and partial failures might be considerably prolonged did space permit. I have given only the varieties best known and likely to be tried by others similarly situated.

HARDY AND GOOD.

The more pleasant list of kinds that have proved successful in point of hardiness and quality of fruit embraces also a considerable number of varieties. From these I select the best of those which add productiveness and general thrift to the first named qualities, as follows:

TETOFKY.—With all its merits this apple has the fault of dropping a considerable part of its crop before it is ripe. Not recommended for market on that account.

YELLOW TRANSPARENT.—Of the same season (August) as Tetofsky; beautiful, very good, exceedingly productive, does not drop. Transports well for a summer apple.

DUCHESS OF OLDENBURG.—It is hardly necessary to praise this large, early-bearing, handsome, and heavy-bearing September apple. Its only moderate quality is its sole defect, yet no apple of its season is more marketable or more profitable. It can be grown much more cheaply than potatoes, and never brings so low a price here. Still it is possible to have too many of an early

apple, unless you are prepared to evaporate them.

WEALTHY.—This is the king of all the hardy apples. As productive, hardy, early-bearing, large and beautiful as the Duchess, it, in this region, keeps well until March, and outsells Baldwin or any apple brought here from the south.

MAGOG RED STREAK.—If it were not for the Wealthy, this would stand at the head of our Winter apples. It is large, handsome, and a good keeper until April. The tree is hardy, thrifty, and a profuse bearer, but the fruit has too little red to compete with the splendid Wealthy as a market apple. And yet it is styled in the report of the Iowa Horticultural Society, “the beautiful Magog Red Streak.”

SCOTT'S WINTER.—This is the apple which well replaces, for us, the Roxbury Russet of a milder clime. It is of medium size, heavily striped, and sometimes covered with red. It is “hard as a rock” until April—sour, and only useful for cooking. As the warmth of Spring begins to reach it, it mellows, becomes mild, aromatic, and far better in quality for dessert than the Roxbury Russet. The tree is a true “iron-clad,” a profuse bearer on alternate years, with a good crop in intermediate seasons. In my orchard of 1,400 trees, the Wealthy and Scott head the list—400 of each. The Scott keeps well into July, and not only keeps, but keeps fresh and crisp, with almost no loss, when properly handled and stored.

RENEWING STRAWBERRY BEDS.

BY OUR MEMBER IN ENGLAND.

I have just all but finished my planting on the principle of dividing the branch or clump into separate heads or crowns, and choosing the best of them for replanting. My two beds or borders are, one just 100 feet long by 12 wide, taking, at 2 feet apart each way, just 300 plants; the other is half the width, 6 feet by a length of about 150; I have not measured it, and therefore having 225 plants, so that I have in all over 500 plants—a pretty little lot for a small garden. The idea of planting this way was quite new to me when I first read of it this summer, but it commended itself to me at once, and my little experience in the planting has fully confirmed my favorable impressions. In the first place the saving of trouble is so great that it is like expunging that word out of the sentence altogether, and instead of giving up the growing of strawberries on account of the trouble, I feel now as if I should not mind if the replanting was a matter of course every year. Now as regards the efficacy or sufficiency of this mode, I cannot see any reason for doubting it. I find, after doing all the manipulation myself, my man only digging the ground (two spades deep) that every crown or head in the clump is to all intents and purposes a new plant of this year's growth, springing like a bud out of the old sort, which it appears to me is the only part of the plant that gets old—just like rhubarb. I believe from all my examinations and observation that the crowns which constituted the foliage of the plant and bore the fruit last season perished when they had done their duty for that year, and gave place to a new growth of buds out of the old root. Each one of these seems to me as completely a new plant as those from the runners, with the difference that they are a generation older, being the parents of the runners, but still both coming into existence the same year. So completely is each crown an entirely new plant, that after having derived its subsistence from the root from which it springs during its infancy, as soon as matured and having put forth fruit and runners, strikes out its own fibrous roots at its base and junction with the old root, which done it is independent and draws only on its own roots. In separating these crowns, I get in each one a complete new plant, with its fibrous roots, just like the new runner, only a generation older and better established—fitter, I should say, than the runner to bear a full crop next summer, but of course being further advanced, must grow itself and fail first. I conclude, therefore, that this system of replanting should be repeated every two years, so as not to let the plants get dependant on a foundation of old roots, or get, as they do when left to themselves, so thickly clustered that they have not, and cannot have, the necessary aid and freedom to grow to perfection, but on the contrary degenerate until they at last grow barren and die. My theory is that if I did not divide these crowns, their cones, so to speak, would during the autumn and winter go to form an addition to the mass of old root, their tops of course decaying, and new buds would spring out in their place, to form the crowns and bear the fruit next year. When I see the result next year and reap the fruit I shall know more about it.

THE DEMPSEY POTATO.—Mr. J. Mather, of Keewatin Mills, North West Territory, states that from his pound of the Dempsey potato he obtained eighty-one pounds, and that the smallest was as large as a goose egg. The potato was in every respect a decided acquisition, and superior to any other variety he had.

BURNET GRAPE IN THE PROVINCE OF QUEBEC.—My Burnet Grape fruited this year for the first time;

it had only two bunches ripe about the end of September. The flavor is very fine—beats all others I have. J. W. CUMMING, *St. Hilaire, P. Q.*

PLANT YOUNG TREES.

Among farmers generally there seems to be a prevailing idea that large trees are best for planting. At least, in ordering, a great majority of the farmers who buy to plant order large trees, which choice I believe to result more from custom than any other cause, and it would be to the farmer's interest in selecting the size to plant, to give this subject more consideration than is generally given.

In planting on the farm what advantages over small trees can be claimed for the larger ones? Not any. If small trees are planted properly, and for the first two years are given a little extra care and cultivation, they will, in every case make finer and better trees, a much handsomer, more valuable and durable orchard than the larger.

Large trees lose in removal, besides the greater part of the tap root, about one half or more of their most valuable roots, consequently leaving the tops too large in proportion to the amount of root, the evaporating surface far greater than the absorbing, and when planted, even though the buds swell and apparently begin to grow, they may soon wither and die from not having sufficient root to furnish the needed fresh supply of nourishment.

The condition of the trees may be bettered somewhat by cutting back, but even then their vigor will be greatly impaired, and they can never equal in thriftiness of growth the smaller trees with roots and tops entire. Large trees are apt to become leaning, crooked or unhealthy from being blown about or shaken by the wind.

With small trees the case is far different, just the reverse in every particular—they have every advantage over the large. At the nursery they cost less; if procured from a distance the freight charges are less, besides being more easily handled and planted. They are surer to grow, for having roots that are not mutilated, almost entire, and proportionate to the size of the tops, they will become established at once and grow; and then making nearly the whole of their growth upon the ground on which they are to remain, they soon become acclimated and perfectly adapted to the soil and location, making more stocky and healthy trees. And now, with all these advantages in favor of the smaller trees, besides the testimony and experience of all the most successful orchardists and large planters, is it not more advantageous to plant young trees?—E. L. WALKER, *in Farmers' Home Journal*.

FLOWERS.—Show us the person who loves flowers, and we will show you one that has a warm heart, that gushes forth joy to those around. It may be hid beneath a rough exterior, but like the unsightly rock, which, when broken open has gems inside that sparkle and dazzle the eye.

Don't pass through this world as though it was made for you, and use it for the one selfish, sordid motive, to make money and hoard it away. Work to please others—try to make your home beautiful and attractive. Don't repress the ardour of your children if their taste runs to "fixing up" the old birthplace.

TRANSCRIBER'S NOTES

A table of contents has been added for convenience.

Please note the following changes:

“tomatos” to “tomatoes” on pp. 183-4,
“conidiiphores” to “conidiophores” on p. 183,
“aquires” to “acquires” on p. 184, and
“Hypa” to “Hyphæ” on p. 185.

Other obvious printer errors have been silently corrected. Otherwise, most inconsistencies, variations and possible errors in spelling and punctuation have been preserved.

[The end of *The Canadian Horticulturist, Volume 4, Issue 12* edited by D. W. (Delos White) Beadle]