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STEHPERLSTEIN & COCHNER

DUCHESS OF OLDENBURG.

FOR CANADIAN HORTICULTURIST.

THE
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THE DUCHESS OF OLDENBURG.



No apology is needed for calling the especial attention of all readers of this journal to this peerless Summer apple, which is a favorite in the cold north on account of its extreme hardiness, and in the southern parts of Ontario on account of its beauty.

The Duchess of Oldenburg is of undoubted Russian origin and of all the importations from that country up to the present it is perhaps the best. The first mention of the apple is found in the records of the Royal Horticultural Society of England, in the year 1824, under the name of Borovitsky, a modification of Borovinca, the generic name of the family, with the statement that it was sent to the society from the Taurida gardens, near St. Petersburg, in that year. In the year 1828 an illustration of the fruit appeared in "Lindley's British Fruits," highly commending it as a Summer apple, together with another Russian apple, the Sugar Loaf Pippin. Now it is widely distributed, and everywhere valued.

The tree is a vigorous grower, forming a well-shaped head that re-

quires very little pruning, and is an early and abundant bearer.

The fruit is described by Downing: "Medium size, regularly formed, roundish oblate. Skin smooth, finely washed and streaked on a yellow or golden ground. Calyx pretty large and nearly closed, set in a wide even hollow. It has a faint blue bloom. The flesh is juicy, slightly sub-acid."

With respect to the hardiness of this apple the evidence is constantly accumulating, until it has become a habit to say "as hardy as the Duchess." In the thirteenth annual report of the Montreal Horticultural Society, the Duchess receives very high commendation in this respect. Mr. R. W. Shepherd, a prominent member, says that it was the only variety in his orchard which has escaped the splitting and dying of the bark upon the trunk. He places it first in his list of apples for profit in that province, and in reply to Mr. Fisk, who ranked it second to the well known Fameuse for market, he said that it brings him a higher price per barrel than the Fameuse, and though the yield is less, it brings him fewer seconds, indeed scarcely any. It also begins to bear much earlier, often the second year after planting, while the Fameuse yields

no fruit until it is out eight or ten years. There is also an advantage in the time they come into the market, viz: early in September, when apples are in demand and there is no glut to contend with. As it does not become so large a tree as the Fameuse, it may be planted closer; Mr. Shepherd would plant them 15 feet apart, and remove the alternates if it should become necessary.

He names the Duchess, Fameuse and Wealthy as the three best apples for profit, and to keep up a fair succession.

Reports from the most northern apple orchards in the province of Quebec agree with Mr. Shepherd in awarding the first place to the Duchess.

Mr. J. M. Fisk, of Abbotsford, P.Q. divides the apples best suited for that province into three classes, according to their degrees of hardiness thus:

- (1) Duchess, Tetofsky and Alexander.
- (2) Wealthy, Haas, Peach and Winter St. Lawrence.
- (3) Fameuse, Golden Russet, St. Lawrence and Canada Baldwin.

He says what is most wanted in the cold north is a winter apple of similar excellent characteristics to the Duchess, and suggests a cross between it and Northern Spy as being a possible success.

In Minnesota the Duchess is also placed at the top of the list and Mr. O. F. Brand says there is in that state a seedling of the Duchess, twenty years of age, and now fourteen years bearing, of which the fruit

is number one, and a Winter apple. It is called the "Peerless," and the tree bore nine bushels in 1884 and nearly eleven bushels in 1886. Since that time it has been so badly cut for scions that it has borne very little. He adds "Yes; the road to lasting success is along the line of the Duchess seedlings."


From northern Vermont we have the testimony of Dr. Hoskins of Newport, who says he finds the Duchess, Switzer and Tetofsky unharmed by the worst winters, while the Alexander, Wealthy and Red Astrachan are often seriously injured.

From Wisconsin we have the testimony of the report of the State Horticultural Society, in which we find a list of seven varieties best adapted to that state for hardiness, productiveness and quality, and the Duchess stands at the head.

The market value of this apple is also a great point in its favor. We, in southern Ontario, find that, as soon as the Duchess comes in, even the showy Red Astrachan must take a second place both in Toronto and Montreal markets, often bringing 75c. per basket; while in New York city it brings as high a price as the Gravenstein, an apple of better quality.

Dr. Hoskins finds that by gathering the finest colored Duchess of Oldenburgs, and keeping them a while on shelves in the cellar, they ripen much better than upon the trees, and are in prime condition for market.

A FEW HINTS ON LANDSCAPE GARDENING.—IV.



THE distance from the main road at which a house is to be built should be governed by its size and by the extent of the grounds by which it is surrounded. Similar considerations also govern the disposal of the approach, or carriage drive, by which access is had to it from the main road, and both these considerations are too often entirely lost sight of by those who plan their own ground.

Manifestly in the case of small village and city lots it would be in poor taste to attempt to introduce those curves in walks and drives which grace the park-like surroundings of an elegant country seat; and, indeed, in most such cases the straight lines are the most suitable because most economical of space, and encroaching least upon the precious green sward.

Unfortunately, many a fine mansion, owing to a lack of taste on the part of the owner, is built so near to the road that no opportunity is left for the beautiful in the arrangement of the grounds, and the house itself appears to the greatest disadvantage; and all this notwithstanding the possession of broad acres which the wealthy proprietor might have drawn upon to extend his house grounds. Where, however, they are admissible, gentle curves in the walks and drives are more in keeping with our modern ideas of taste than the straight lines, and the stiff geometric style of gardening of the ancients. Our model is nature itself, in which we see the

curve predominates, and the trees and shrubs are not in straight lines, but grouped in ever varying shapes and forms. In such a case, then, the disposal of the approach is a study, and should be made to enter the grounds amid dense groups of forest trees and shrubs, so arranged as to conceal the house itself until the best point of view is reached, after which there should be little to attract the eye away from this object. But though curves are desirable they should not be introduced too freely or without at least some apparent reason; as, for instance, a group of shrubbery, a large tree, or perhaps an elevation, about which an easy ascent is desirable.

It is recommended that the entrance from the public road be not too abrupt, but at an easy angle, so as to give the approach as much importance as possible. It is also important that the carriage way should not skirt the boundary too closely, for that would betray the limit of the estate, and impart a sense of confinement, which is not in good taste; indeed, all such division lines should be concealed from view as much as possible, not by stiff, formal rows of evergreens or other trees, but by groups so arranged as to conceal objectionable features when viewed in passing, or from the windows of the house. And just here another important point should not be overlooked, viz., that these clumps of trees and shrubs be also so disposed as to leave open to view,

especially from the side and front windows, any distant scenes which are interesting to look upon, and with this object imaginary lines should be drawn across the lawn, along which nothing should be planted which would obstruct the view.

Probably nothing in our coun-

needed that will be almost invisible.

The drive is an extension of the approach which can be used to great advantage by our wealthy farmers, whose well cultivated fields and beautiful orchards invite the attention of the visitor. A drive-way of such a kind need not be kept with



FIG. 33.

try so offends the eye of the cultured foreigner as our picket fences, or "palings," as he calls them, and certainly when one considers them, even when painted up in the most suitable colors, they are a blot upon our landscape, tiring the eye with stiff formal lines of wood. Neither is there the same excuse for their employment as formerly, for the introduction of wire fences has enabled us, by using a neatly turned post, to put up a fence where it is

such scrupulous care as the approach, with its even edge of closely shaven sod, but may be itself a strip of green sward, just large enough to be easily kept cut with the mowing machine, and along it may be planted choice specimens of plants, trees and vines. It may be planned to lead through the most attractive portions of the farm, and will prove, according to the experience of the writer, both a delightful walk and a charming drive, much preferred by every

member of the family to the public road.

On a closely shaven lawn we see little need of cutting walks, for by them the cost of caretaking is largely increased, and, if overdone, they are rather a blot than an ornament to the landscape. Still, when leading to a much frequented spot, as to a flower-garden, or to a retired summer-house, or to an attractive promenade, it is in good taste to lay out a walk, curving about real or artfully placed obstacles in such a manner as to bring into view the most attractive features of the grounds in graceful succession.

In the accompanying illustration (fig. 33), some of these principles are well worked out. The elegant mansion is situated far back from

the main road, and well concealed from the entrance by a curved approach, until a favorable point of view is reached. To the right there is a sudden descent into a beautiful park, which is not shown in the engraving, while to the left and in the rear all boundaries are well concealed by a tasteful disposition of trees and shrubs.

By a little attention to such points as these our readers, who have some natural ability in the way of design, may have the pleasure of planning out their own home surroundings in such a way as to be almost above criticism, for even the professional gardener must admit that to form all plans upon any one model would be an unpardonable blunder on his part.

ARRANGEMENT OF FLOWERS IN A BED.

By J. HOYES PANTON, M.A., PROF. OF BOTANY, AGRICULTURAL COLLEGE, GUELPH.

AS Spring approaches those interested in flowers begin to think of gardening operations. It is a pleasant thing to notice among other signs of progress in our country that taste is developing, and that this is manifesting itself among our people in a greater love for flowers. Homes that a few years ago were without a flower garden are now found centres of attraction to those who love to look upon the beauty shown in a flower. In the house the windows are adorned, and outside the eye dwells upon attractive flower-beds that indicate the refinement and taste of those who work among them.

With a view to encourage this desire for the development of the higher faculties of our nature, I purpose giving a few notes on the arrangement of flowers, which, if followed, will improve the effect in many cases.

I. FORMS OF BEDS.

I need say little upon this. It is a matter of suiting one's own taste as to the shape most pleasing to the eye: circular, rectangular, square, diamond, star or other form. However, a variety always has good effect.

2. METHODS OF BEDDING.

There are four principal methods:

(a) Mass bedding, where all the flowers in one bed are of the same kind. In the case of such plants as *Portulacca* this is very effective.

(b) Ribbon bedding, where the plants are arranged in lines; each line made up of plants of the same kind, e.g., a line of geraniums, beside it a line of the coleus, etc.

(c) Carpet bedding, where the plants are arranged according to some pattern. This pattern may be simple or complicated. A simple arrangement is diamond in the centre; this will be made up with plants of one kind; bordering, it may be, triangles, each with different flowers. Any pattern may be followed and rendered very attractive by the selection of proper flowers which must be chosen with regard to color and size.

(d) Promiscuous bedding, where a great variety of flowers are used in one bed. Great care requires to be exercised in order to make this method effective; both color and size of flower are of importance here. This method of bedding may be called the common one, but in a great many cases it consists merely of a number of plants put in the bed without any reference to habit, size or color.

Arrangement of flowers with reference to size: In circular beds the high flowers should occupy the centre, and the lowest the borders, filling up with flowers, which, as far as possible, form a regular slope from the lowest to the highest. In a bed of this kind the flowers may be arranged in a series of circles; the border very low, and each successive circle with higher plants until the centre is reached. This may be

occupied by a single plant which is higher than any of the others. If each circle contains plants of the same kind, and these circles are arranged with reference to the color of the flowers in them, the effect is very striking. In other shapes the idea of arranging according to size should always be considered.

Arrangement with reference to color: The effect of flowers is often lost on account of there being no attention paid to the matching of colors; color has its effect in a garden as well as on a lady's bonnet. Attention to the following combinations may prove of use to those who desire to give more attention to this matter:

1. Blue, red and yellow, usually called primary colors, should not be too near each other.

2. Yellow and violet, red and green, blue and orange, contrast favorably.

3. Violet and orange, violet and green, also contrast well. In this case you have composite colors contrasted, and not simple as in preceding.

4. Red and orange, red and violet, blue and violet, green and blue, form poor contrasts; but if the simple color is in small proportion the result is greatly improved. Red, blue and yellow are what we term simple colors. Violet, orange and green are composite; violet being composed of red and blue; green, of blue and yellow; orange, red and yellow.

5. All colors, simple or compound, are improved near white, consequently the introduction of white between colors has a good effect.

PLUMS.

By GEO. W. CLINE, WINONA, PRESIDENT GRIMSBY FRUIT GROWERS' ASSOCIATION.

THE planting and growing of plums seems to be in the minds of a great many fruit growers at the present time, all anxious to know the best kinds to plant for profit, the best mode of cultivation and manures to use. I will try and give you this in as few words as possible.

THE SOIL, best adapted for plums is a clay loam or an alluvial soil, but plums will do fairly well on a heavy clay by first-class cultivation. On a sandy soil they are not likely to do well without a clay subsoil quite near the top; besides the curculio is very much worse in a sandy soil because it is much easier for them to burrow in it and hide themselves. A plum orchard should have the best of cultivation, especially as soon as the trees commence to bear crops, because this is very exhausting on the soil of moisture, while cultivation and manure help to bring the fruit to perfection. Of course all soils should be well drained, either naturally or by tile drains before planting, as the plum tree will not stand and thrive in wet ground. The manures best adapted to the plum are those with a great amount of potash and phosphoric acid, together with an occasional light coating of barnyard manure and a light dressing of salt. I have also found that sulphate of iron is a good manure, giving the leaves a very dark and glossy appearance and the fruit a very high color. Cultivation is very necessary in preserving the crop in time of drought as the plum tree at that time is very

apt to drop its leaves, and the crop to wither and come to nothing. Cultivation will also help to drive away the curculio, as the little Turk does not like to be disturbed as he burrows in the ground in the day time, but it should not be forgotten that cultivation should not be deep, indeed all cultivation in our orchards and vineyards should be shallow, not over three inches deep. As to

KINDS OF PLUMS

for planting the list may be long or short, just as the planter likes. The varieties are numerous that are profitable for this section, but the following list is long enough and good enough for anyone, and the trees can be easily and cheaply purchased, viz:— For *Early*: Imperial Gage, Smith's Orleans, Washington, Niagara and Bradshaw. *Medium*: Lombard, Gen. Hand, Pond's Seedling, and Yellow Egg. *Late*: Quackenbos, German Prune, Reine Claude de Bavay, and Coe's Golden Drop. There are others I would add but they are not so easily got, such as Victoria, Columbia, Lawson's Golden Gage, Duane's Purple, Glass' Seedling, Munroe, and several others, but we have here plenty from which to select and it is very doubtful if we ever will get any addition to these that will be any more productive or any more profitable for the grower.

In spraying, I watch very closely for the curculios about the time the blossom drops, and have found that it does not always pay to wait to

find them, as they come very suddenly with the warm weather, and in one hot day and night may sting the lion's share. They generally commence on the pears, such as Bartlett, Louise Bonne or Duchess, thence to the cherry and plum. They often almost destroy the pear crop by making the pears very knotty. A great many people do not yet know the cause of their pears and apples being knotty, but the curculio is the cause of all the knots in them as well as of the worms in the cherries; they are also the cause of the holes often found in the different fruits. Now this can all be prevented by applications of Paris green and water at different times during the season, at the rate of 3 oz. of Paris green to 40 gallons of water, kept well mixed and sprayed on the trees. The first application should be made just after the blossoms drop and again at intervals of 6 to 10 days for 4 to 6 weeks according to the weather, dry or rainy, and the number of curculio on hand to be killed.

IN SPRAYING APPLES

I spray twice generally, the first time when they are about the size of my little finger end, then again before the apple turns over to hang down. You will notice the apples, when small, all stand with the blossom end up, ready to catch the poison; and

as the codling moth lays its egg in the blossom end, if there is poison there the worm is sure to get it as soon as hatched. Thus the apple is saved and perhaps several other apples, as the worm, when done with one apple, eats its way out and goes into another, and destroys that also. I think another good plan to trap the codling moth is to have a lantern standing in the orchard over a tub of water; the moth flies very freely at night and is attracted by the light, strikes the glass of the lantern, falls into the water and is drowned.

Pears should be sprayed even earlier than plums as the curculio commences on the pear. I do not agree with some of the professors of agricultural colleges as to the amount of Paris green that can be used without hurting the leaves. Some of them go as high as one pound to 100 gallons of water; 10 oz. to the 100 gallons make a very strong application, and I do not generally use more than 3 oz. to 40 gallons. The Paris green should be kept well stirred, because if allowed to settle in the barrel it will get strong and burn the leaves. Some brands of Paris green require to be dissolved in very warm water, as they will not dissolve at all in cold water. I do not like those brands as there is plenty to be had that will dissolve and I think them much better.

THE CURCULIO, OR PLUM WEEVIL.

BY SIMON ROY, BERLIN.

FROM present indications it is apparent that the plum crop will be good this coming season, but in order to secure it satisfactorily the curculio must be persistently headed off, or otherwise destroyed. It must be borne in mind that delay in this case is dangerous; before you are aware the greater part of the crop may be damaged. Commence operations immediately, or even before the blossoms fall, as it makes its appearance simultaneously with them, and is ready for operations as soon as the plum is the size of a pea. Prevention being better than cure, I have found that spraying the trees with a weak solution of bitter aloes produced excellent results, thus cheating the instinct of the insect. The smell is not suitable to its tastes, and it will give the tree a wide berth. Jarring or shaking the trees and catching and destroying the insects as they fall upon cloths spread at the base of the trees is an excellent way of getting rid of them, but is only applicable to small sized trees. The best catch is usually in the evening just about sundown. Merely shaking the trees in the evenings is a good plan, as those which fall to the ground are usually devoured by toads in their nightly search for food, which consists principally of coleoptera. The habits of the curculio differ from many of the other beetle family: instead of making its escape by flight

it drops, upon the least disturbance, to the ground as if dead, and it evidently does not at all appreciate disturbance, as is evident from the fact that those trees planted in the vicinity of my buildings, where the sparrows are continually flying into and about, rarely drop a plum with a curculio mark on it, no claim being made as to the birds eating the insects. The sparrow is somewhat like the crow—both are omnivorous—having “crops for a corn”; neither object to eating grain when it can be obtained, but will also eat bugs and other animal food in an emergency.

Sprinkling trees with a solution of Paris-green has been advised, but as yet I have never tried the experiment, failing to see the *rationalité* of it. Many falsities pertain to both the Medical and the Horticultural profession: often appearances are assumed as realities, when the effects are attributable to something else; perhaps disturbing the insects in the process of spraying has produced the real result.

P.S.—Perhaps it may be as well to remark that in using aloes avoid inhalation of spray on account of its cathartic effects; and not to use it near to dwellings on account of its rather offensive and pungent smell. Personally, I have never experienced any bad effects from the use of it.

NOVELTIES.

The Golden Prolific Gooseberry.

MR. CHARLTON, of Rochester, is the introducer of a new gooseberry with the above attractive title. The accompanying en-

graving is made from a photograph, and is claimed to be a faithful representation of its size and productiveness.

Mr. Charlton sends us the follow-

ing particulars concerning this new gooseberry :

“ This promising new variety is an American seedling of the English type, and was found in 1882 growing in the crotch of a locust tree, in this

having fruited the past six years continuously in several localities, and is, without doubt, a decided success.

“ It is perfectly hardy, a good grower and unusually free from mildew. Its foliage is a dark, glaucous green, and



FIG. 34.—THE GOLDEN PROLIFIC GOOSEBERRY.

city, and transplanted to my grounds.

“ The seed which produced it was evidently dropped there by a bird. It has passed its probation stage,

in a young state its wood is very spiny, being very distinct in this respect. Fruit large, of a deep golden yellow, of excellent quality,

and is very attractive in appearance. It is a heavy fruiter, and I believe is destined to become as popular as the Industry, and, unlike that variety, it can be propagated successfully."

P. C. Reynolds, editor of the *Rural Home*, August 18th, 1888, says: "We found a few bushes showing a good, vigorous growth of wood, and one of them not yet picked, heavily laden with large, yellow fruit of excellent quality. It was singularly free from mildew, although evidently of foreign origin. It occurred to us that it would be a good mate to the Industry, that being red and this yellow."

The Stachys; a New Garden Vegetable.

Noticing in several of our exchanges mention made of a new garden vegetable, which seems to possess considerable merit, we wrote to Mr. Elmer E. Summey, of La Salle, N.Y., for further information. In reply, he writes:

SIR,—I have no tubers or plants of the Stachys for sale, but I send you a sketch of the vegetable, made directly from tubers which are now growing in pots in my window.

I notice in the April *American Garden* that a correspondent reports that the Stachys is growing wild about the Bay of Chaleur, P.Q., and is regarded as a weed. Have you any knowledge of this, or can you gain any? It hardly seems possible *S. tuberosa* could become a weed, or that it would be naturalized in such diverse climates as N. Africa, Florida and Quebec.—ELMER E. SUMMEY.

Mr. Summey also contributes the following article on this vegetable, heading it

A GARDEN NOVELTY OF MERIT.

Stachys affinis, or *tuberosa*, is the botanical name of a novel vegetable which but lately has attracted some attention, first in Europe, then in his country. It is a native of North Africa, but comes to us from Japan, where it is called Choro-Gi. It is allied to the English ornamental Wound wort (*Anthyllis arvensis*), and

belongs to the same family as the Coleus, and the sweet-scented herbs, Lavender, Thyme and Mint, but differs from its relatives in that it yields edible tuberous roots.

These roots are formed of ring-like ridges, giving them the appearance of a one-horned caterpillar (see figure), varying in length from one to three inches, and in diameter from one-half to three-fourths of an inch. The skin is thin, smooth and semi-transparent.

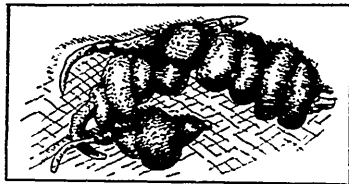


FIG. 35.—THE STACHYS.

This peculiar vegetable requires no more special treatment than do potatoes, and even poorer soil will answer, though, like everything else, the more attention that is given the greater and more satisfactory the result will be. Planted, a single whole tuber, in hills two feet apart each way, a yield of nearly 500 bushels to the acre has been reported, each plant yielding from 200 to 300 tubers, which may be planted like potatoes, though each joint of the stem can be used as a set.

The plant, growing about a foot in height, has a round, bushy habit, having medium sized, oval-shaped leaves, and has many small pink flowers which in themselves are not unattractive.

As for the use of these roots, they probably will never become a staple article for the market like other products, but will tend toward securing more variety for the table in Winter. When pickled alone and properly seasoned, or mixed with small cucumbers, onions, peppers and cauliflower pickles—they are excellent; then again when cooked as vegetable-

oysters, they are delicious; or boiled, mashed and seasoned in the way of the Egg Plant, they become a novel side dish, having a pleasant and somewhat spicy flavor, midway between the Jerusalem Artichoke and boiled Chestnuts. In preparing them, washing only is necessary, as the thin

tender skin renders peeling needless.

A point not to be overlooked in favor of their general use and cultivation is that they may be kept as well, as easily and as long as potatoes, requiring only a cool, dry cellar; keeping their fresh appearance best if covered lightly with earth.

A FIRST LESSON IN FORESTRY.

By T. M. GROVER, B.A., PETERBOROUGH.

SINCE I began to lay out a small plantation of timber trees, and told my friends what I was doing, I found every one interested in the subject, and many made enquiry as to the nature of the seed or seedling trees required, and the mode of working. As I had to teach myself each step in the business, I think I can guide any beginner into a little easier way than I found for myself.

To learn it at a single lesson, I would say to any one who has cultivated land near his home, to send one dollar to some wholesale nursery for a few seedling trees. These nurseries are plentiful in the United States, from New York to Illinois, and they will send you a dozen or fifty or one hundred little trees by mail, of almost any variety, and there is no duty on them (as yet), and no risk of injury in transit. These seedlings, though no larger than a cabbage plant, will endure cold and packing for a long time, and I have heard of ash seedlings kept in a storehouse for three years with safety. They are shipped all winter. These hundred trees are from seed planted last spring, are very small and cannot yet contend with weeds or sod, so they must be planted close together in a row and kept clean, and the better they are cultivated like a vegetable, the more they will grow. Some, like the Ailanthus, Locust or Box Elder, will grow five feet the

first season. They will all make a very fair growth.

For further observation keep them cultivated another year or two in the same place, and then move them wherever you like.

The strife with weeds and soils will show what trouble one would have with a whole field like that for a plantation; the style of seedlings, the growth, the season and the care required are just the same, but for field culture with horse power it is better to get two-year-old seedlings, as they are so little more in price, and for any but skilled nurserymen, more easily cultivated.

Any one who would like to have an acre of solid timber, or ten or one hundred acres, and who will give it his personal care, will have no trouble in making the trees grow. There will not be five per cent. loss in transplanting, and the cultivation (not that generally given to lawn or street trees) stimulates such an unexpected growth that the planter will be more than satisfied, in Canada, where planting has not begun yet, and for a small lot it would cost very little to get good sized trees, say four or five feet high, and when planted only four or five feet apart, a block of such trees is very interesting. It is quite unnecessary for any one to trouble himself with tree seed, for although there may be 20,000 seeds in a pound, it is not likely that at the

end of the season an amateur would have more than a few hundred seedlings, which could have been bought with the same money.

Seedling trees are sold at all prices from fifty cents to fifteen dollars a thousand. A thousand will be a small bundle and the freight very little, and when planted would cover nearly half an acre. They can be planted in a cornfield and cared for when the corn is cut; need no pruning but only to be mounded up with earth in the fall to protect from mice, and after three years need no further care except to keep up the fence.

After a man has had this much experience, what more lessons will he need? He will have taught himself; and the only thing more I could tell him would be what varieties of trees to buy and where to get them. Any one who wanted to know more about tree planting could try raising a few walnuts from the nut, or a small plantation of evergreen trees.

But my work did not tend in an easy course to distinct success. In my first lot the seedlings were late in arriving and too small in size, and the field was not clean enough, so shortly I was entirely overrun with weeds. The loss of some trees, little growth of others, and expense of getting it clean again, was discouraging.

The same with my walnuts planted just where the book said, *i.e.*, where they were to grow, as I now know they should not be. Another difficulty I had was from not knowing the varieties of the seedlings by sight and from having too many varieties

and too large a number come at once, and then planting in a hurry. The cultivation required is to be fine. They must not be left to be shaded by the weeds and suddenly uncovered by the cultivator.

No land owner need hesitate to plant a timber lot for fear of the expense. Although I have seen an estimate for forty acres of a plantation on the prairie at one hundred dollars per acre, to include cultivation and care for three years, and the charge for plantations by contract in large lots is generally called fifty dollars per acre, yet in our cultivated land, where we will do the supervision and labor ourselves, the whole cost can be got down to five dollars per acre, to be paid for trees alone. I have known box elder seedlings sold at \$1.25 per 1,000, ash at \$2, cottonwood at \$2, locust at \$4, and the evergreens at very little more.

As soon as forest plantations are really wanted, I think I have shown that there are no practical difficulties to prevent their being started in Canada, nor are there any reasons to expect a failure of the trees in after years. We are not threatened with insect pests, as the planters in Virginia found themselves after their trees were twelve years old. Destructive storms or unusual seasons will not frighten us. We don't fear a stratum of alkali being found by descending roots and killing off a whole plantation just as it gets valuable, as some in California have suffered.

If we are not ready for plantations, we can safely consider the prospect.

APPLE TREE BORER.

By S. P. MORSE, MILTON.

THE chief cause of the depredations of this *Buprestis* is some previous injury to the tree it chooses for attack. The whole family, like the more depraved of human worms,

selects its victims not from those that are robust and able to resist, but from the already enfeebled. There is not a trace of the good Samaritan in them.

When the circulation of the sap is slow, as in a tree poorly cultivated, or for any cause, or when a tree, as is too often the case, leans to the east so that the one side is exposed all day long to the vertical rays of the sun, or when a tree is newly set and before its fibres have fairly put their little mouths to the breast of mother earth and consequently the tree is nearly dormant and the sap motionless—the sun cooks or decomposes the sap, kills it as sap. This dead sap is what the borer has a weakness for, and he can't resist the temptation to

bore for it, and the wood is killed and saturated by it.

A sure preventive, so far as the agency of the sun is concerned, is to *protect from the sun* by any device not adapted to harbor other insect enemies. The main purpose of these presents, however, is to give a hint respecting *trees recently set*, the proper way to protect which is to drive a stake *six inches or so wide* and of the height of the body of the tree, to shade it from the sun's excessive rays. It will protect the tree from the more violent winds as well. *Tried.*

INSECT ENEMIES.

By JAS. FLETCHER, ENTOMOLOGIST, ETC., GOV. EX. FARMS, OTTAWA.

THERE are three great evils in Ontario which require immediate attention from fruit growers, and should be seen to during the month of May.

1. The Codling Moth, the caterpillar of which destroys so large a proportion of the apple crop every year.

2. The Plum Curculio, which destroys plums and cherries.

For both of these pests simple and cheap remedies are found in thoroughly spraying the trees after the flowers

have fallen, with a very weak mixture of paris green and water; 2 oz. to 40 gallons of water.

3. The Black Knot. This is the fungous growth which causes the Black excrescences on the branches of plum and cherry trees. Each of these knots contain myriads of spores capable of reproducing the disease. These mature in the spring and are thrown out by the fungus, and distributed by the wind.

Before the leaves expand, every knot should be cut off and burnt.

ENGLISH AND CANADIAN FORESTRY.

To the Editor of THE CANADIAN HORTICULTURIST.

SIR,—I trust that the present Spring will see a considerable amount of tree-planting done. When travelling last Summer through England and Scotland, nothing was so plainly observable to a Canadian as the fact that the country was well sheltered. Everywhere were hedges, everywhere fine trees along them, every here and there, plantations. Those who owned the land appar-

ently were far from grudging the trees their standing-room, and the result well repaid them. Such crops of wheat, such weight of grass per acre as was there obtained, often doubled or trebled Canadian products. Comparing Canadian with English farming practice, no one could doubt the shelter given had much to do with the fertility of the land. It was a painful contrast to many of our Canadian farms, where

it looks as if the owner had cut every tree from the surface to produce a square expanse of bare earth—as bare, as hard and as unsightly as an Illinois stockyard.

How different this to what a farm should be, with its reserve of forest well-kept, free from the intrusion of cattle, and in good forest condition; its bed deep with leaves; its young trees rising emulous to the height of the old,—ready to replace them when they are cut down for use; its massive wealth of foliage; its pleasant walks, cool and umbrageous in the hottest day; its living springs preserved by trees; its lines of wind-breaks opposed to the cutting blasts! Such a farm, so kept, is a place of beauty, a place to live and die in. The other, shaved flat to the surface is a place to toil, to make money, if

farming pays, perhaps, but it is never a pleasure to those who inhabit it, if they possess any of the finer sentiments of our nature. It is not always even the best place to make money by farming, for he who has the trees will have the grass crops, he who has the grass crops will have the manure, and he who has the manure will have the wheat.

The new forestry report is now being distributed, and any one desiring it, by sending his address to me, will receive it by mail. It is a pamphlet distributed free yearly by the Ontario Government. There is no price for the book, and no charge for postage. It will be found to contain much information interesting to all who interest themselves in the forest.—R. W. PHIPPS, 233 Richmond Street, Toronto, April 15, 1889.



From Our Exchanges.

Phosphate Meal.

A NEW source of phosphoric acid is phosphate slag. This consists of the slag remaining from the manufacture of steel or pig-iron by the Thomas process. The dephosphorization of the iron takes place by melting the iron with lime in a current of air, whereby the pig-iron, rich in phosphorus, is converted into steel, free from phosphorus. The phosphorus of the pig-iron is thus converted into phosphoric acid, which unites with lime and forms phosphate of lime. The melting mixture of phosphate of lime with the excess of lime and combinations of the iron and manganese, is called Thomas slag. It is finely ground, and it is well spoken of in Europe as a cheap source of phosphoric acid for crops that do not need this element in an immediately available form. Analyses of German phosphate slag and of English slag, made at the Massachusetts experiment station, are as follows:

	German Slag.	English Slag.
Water.....	5.08	0.37
Iron and alumina.....	15.98	8.55
Total phosphoric acid	21.05	18.91
Lime.....	53.97	49.22

It is claimed that phosphoric acid can be furnished at less cost in this phosphate meal than in any of our known mineral resources of insoluble phosphoric acid. A few sales of it have been made in the Connecticut valley at \$15 per ton. If we reckon the phosphoric acid at two cents per pound, the price put upon insoluble phosphoric acid in rock, the slag analyzed has a valuation of \$8.42 and \$7.56 per ton respectively. We are glad to see that the Massachusetts station proposes to make some experiments to test the availability of this phosphate and see whether its acid is worth more than two cents per pound. Director Goessmann says of it: "The composition of the slag is peculiar on account of an excess of caustic lime, which

favors a breaking up into minute particles when exposed to air and moisture. The more finely ground, when exposed to atmospheric influences, the more rapidly a general disintegration ensues. This behaviour tends to diffuse the phosphoric acid and favors absorption by the roots. No previous treatment by acids has been found necessary to secure satisfactory returns when used as a phosphoric acid source for plant growth. On account of the alkaline reaction of the 'phosphate meal' no ammonia salts or organic nitrogen compounds should be used as an admixture for the production of more complete fertilizers. In case nitrogen is to be applied, nitrate of soda is used to furnish the element. Muriate of potash and kainit are recommended as a source of potash." *Ex.*

Our Native Plums.

If, as we are told by DR. GRAY, the European Plum, *Prunus domestica* has its original in the almost inedible sloe, and yet there have been derived from it such a multitude of delicious varieties as we now cultivate, what may not be hoped, as the result of high culture, crossing and selection, from native species like those of the American continent, which, when merely growing wild in thickets along the water-courses, send such waves of rich perfume across the land leeward? It seems to me that in these native Plums we have the easy potentiality of a class of fruits that will give to the "cold north" a two months' supply of fresh fruit which will, in time abolish all regret that the Peach, Nectarine and Apricot are denied to them by a vigorous winter. For it is a fact that our *Prunus Americana* has a range far north of our national boundary, being, in fact, the hardiest of all tree fruits. It is of the most easy cultivation, and very susceptible of improvement.

If it were not already, in its wild uncultivated state, so good, we should have unquestionably, long ago, sought to improve it. As it is, we find it nearly everywhere north of the range of *Prunus domestica* produced so abundantly in its season as to be almost destitute of any settled commercial value, which can only be imparted to it by the production of improved sorts, superior in size, beauty and flavor to the too abundant wild products.

For canning or preserving, even these are by many regarded as quite equal to the Peach (as we get it); and, in fact, superior to most of the fruit which reaches us. But nothing is more evident than the easy susceptibility of *Prunus Americana* to rapid improvement—*Vick's Magazine*.

A Nut for Defenders of the Sparrow.

THE amount of damage that the English sparrow is capable of inflicting is pretty plainly set forth by Thos. Copsey, Hillsea Farms, Hants, in the *Mark Lane Express*. He says:—In one year—from September, 1886, to March, 1887—when my bird-catcher refused to catch more for fear of the informers, I paid him 4d. per dozen for 494 dozen and 10 sparrows, and this spring I paid him for 198 dozen and six sparrows at 4d. per dozen, £11 11s. besides employing a man with a double-barrel gun to shoot sparrows. We have many fowls, and the plan was to set long troughs to feed the fowls in, so set that from port-holes in a barn he could sweep the troughs with sparrow shot after the fowls had left. They generally were swarming with sparrows, and most charges brought down various numbers—from six to twenty-eight. I paid for 250 cartridges, if not over 300. As no account was kept, the number killed is but guess. We will say eight on the average of 250 shots will be 2,000 birds; bird-catchers 693 dozen, equals 8,316; total, 10,316.

My bird-catcher tells me that twenty dozen sparrows ate three gallons of oats

or two gallons of wheat daily when he has to keep them a few days.

I have entirely given up growing wheat for years on our home farm. On a five-acre piece of wheat (the last grown in 1882) the ground, when the wheat was reaped; could not be seen for the chaff that the sparrows had billed out. They began to eat in the soft milk, and continued till it was carted when in shocks; by eight o'clock in the morning, from fifty to over one hundred could be counted flying off from one shock. If the sparrow was a friend to farmers, go back fifty years, and it will be found the overseers of every parish that I know of encouraged all the boys to take sparrows, and gave them sixpence per dozen for old sparrows, threepence per dozen for young ones, and twopence per dozen for eggs. I never saw the cornfields damaged much at that time; the money was paid out of the rates.

The boys were afraid to take the eggs, and catchers were afraid to catch them in breeding-time, so that they accumulated tenfold till the war had to be opened afresh, and thousands of guns are dealing destruction to the sparrows; all round our stack-yards the wounded groan, and cats get fat killing and eating the wounded. What an unkind set of people these wild bird preservers are to cause the increase for so cruel an end!

Friends of the Farmer.

It may be an advantage to point out some of the friends of the farmer, which, consequently, no farmer should destroy or allow to be destroyed. Among these are toads, which are, under all circumstances, the farmer's friend; moles and field mice, probably, do a vast deal more of good than harm; all birds, especially robins, wrens, thrushes, orioles, cuckoos, phebes, blue birds, woodpeckers, swallows and cat birds. The destruction of all these and many others, except for scientific purposes, should be made, under very heavy penalties, illegal in every State.

The house sparrow, known better as the English sparrow, is to be rated an exception. This bird is now universally regarded as a nuisance, first, because of its grain and vegetable destroying propensities; secondly, because it drives away insect-destroying birds.

Among insects, many wasps are friends, especially those with a more or less protruding horn or sting at the end of the abdomen. Lady-bugs and lace-wing flies live entirely upon destructive insects, especially plant lice and Scale insects, and should never be destroyed. Dragon flies, or devil's darning-needles, are also useful as well as harmless.—*Bulletin 46, New Jersey. A. C. E. S.*

The Merits of Various Strawberries.

FROM experience here in Connecticut, correspondence with leading fruit growers in every state in the Union and Canada, as well as from personal observation in fourteen of the Western states during the fruiting season, I would classify the leading varieties as follows:—

The most productive—Pineapple, Hampden, Lida, Bubach, Windsor, Crescent, Jessie, Manchester and Warfield.

Largest Berries—Jessie, Bomba, Jewell, Prince Logan, Ontario, Sharpless, Bubach, Belmont, Mammoth.

The best flavored berries—Prince, Gold, Miner, Belmont, Summit, Downing, Kentucky.

The earliest to ripen—May King, Iron Clad, Crescent, Parry, Lida, Warfield, Monmouth, Bubach, Hampden, Wilson.

The latest to ripen—Ohio, Kentucky, Windsor, Gandy, Manchester.

Best for light soil—Crescent, May King, Kentucky, Bubach, Miner, Downing.

Best for heavy clay soil—Jewell, Sharpless, Belmont, Logan, Jessie.

This classification is not given as an invariable rule to follow, but is general in its scope and each family will vary it somewhat to suit their own tastes and local conditions. It can, however,

be used as a partial guide to assist in pointing out the way to a proper selection, either for home use or market.—
J. H. HALE in *Hartford Courant*.

Potting Plants.

MRS. THOMPSON, in *Popular Gardening*, says: A florist once gave me this rule for making up potting soil: one part sand, two parts well rotted cow manure, two parts garden or vegetable mould, and following these directions I have had marvelous success. While it is not agreed with all that drainage is essential with pot plants, yet my best success came from a liberal use of same.

Liquid manure is one of the right hand measures to a vigorous and thrifty growth of plants; strong enough to color the water and applied regularly once a week, the result will astonish you. I have also used, as cleaner and less objectionable, a weak solution of ammonia.

I think in geraniums I had my poorest luck; I have read of and occasionally seen plants covered with blooms, but I never had the joy of possessing them. My plants made vigorous growth, but rarely had over three clusters of blooms, sometimes not that. I knew I fed them and tended them faithfully, but no blooms, whilst my friends, whom in my conceit I thought I could teach how to grow plants, often surpassed me with these.

I came to learn after a long while that small pots and plants root bound were the best for bloom. I have often bought a geranium growing in a rusty, dirty tomato or peach can, and carefully transplanted it into what I considered far better soil and quarters, but which as a rule ceased to be a thing to be desired, though with the scented geraniums I always succeeded.

The Home Garden.

EVERY farmer should devote half an acre or more to small fruit. He

will find a home market taking every day quarts upon quarts at high prices. Every dollar expended will save two in meat and medicine bills. At home and at school fruit is better for children than cake and pie, and the table the year round should be supplied with fruit, either fresh or canned. In the latter form raspberries retain their flavor best of all. Farmers say they can buy better than to raise, but they never buy enough. In my own family—not large—we use six to ten quarts of small fruits daily from June to August. A friend with a half-acre city lot had it plowed and fertilized, and planted \$26 worth of plants, kept account of expenses for five years, with credit at market rates for fruit consumed; the profit was \$160 annually. Every farm and home should have such a half acre, and then will be found health and happiness, as well as money, in small fruit.—J. H. HALE.

Planting Tree Seed.

My way has always been a success. Ten days before planting I put the seed in a vessel large enough to allow it to swell. I cover it with water that is daily renewed for five to eight days, or till the seed is well swelled. I next saturate a cloth large enough to cover the seed and turn the seed out and mix it well at least once a day. Be sure to keep the cloth wet. Keep the vessel in a warm place if possible, unless it be quite warm weather, and in two or

three days the seed will be well sprouted and fit to plant.

Walnuts of all deciduous seed need the most pains, or rather the plan is different. The best way is to put them in the ground when picked from the tree, but always observe the following rules: Place them under four or five inches of soil all together in a bunch, and they should be in a very damp place. Then keep them well soaked with water for three weeks, and occasionally through the winter throw on water. By May 1st some of them will be sprouted. All that are not sprouted put into a barrel in the sun and turn the barrel daily for two or three days, then look at them. Most of them will be sprouted. If any are not water them, and put these through the same process and nearly every one will grow. Cover them two inches deep when planting in heavy soil, and deeper in light soil. I have made it a business.—G. C. HULEE, *Merrick County, Neb.*

THE relative hardness of woods is calculated by the hickory, which is the toughest. Estimating this at 100, we get for pignut hickory, 96; white oak, 84; white ash, 77; dogwood, 75; scrub oak, 73; white hazel, 72; apple tree, 70; red oak, 69; white beech, 65; black walnut, 65; black birch, 62; yellow and black oak, 60; hard maple, 56; white elm, 58; red cedar, 56; cherry, 55; yellow pine, 54; chestnut, 52; yellow poplar, 51; butternut and white birch, 43; and white pine, 35.



SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter are at our risk. Receipts will be acknowledged upon the address label.

THE SUMMER MEETING this year will be held in the town of Seaforth, early in July, in accordance with an invitation received from the Town Council of that place. Enquiries have also been received concerning the holding of it in Windsor, as the County of Essex is rapidly reaching a foremost place among the counties of Ontario in fruit culture. The officers of our Association are pleased to receive such invitations at any time, and other things being equal, will try to visit each district sending in an invitation in the order in which their invitations are received. These should either come from the corporation of the town, or from the officers of some organization, such as Farmers' Institutes, Horticultural Societies, local Fruit Growers' Associations, etc., who will take an active part in working up a local interest in the meeting.

THE PEACH CROP this season in the Niagara district promises to be fairly good, and this will be a great boon to many fruit growers who have felt much discouragement during the last few years, in which not only has the peach crop failed, but

the prices of small fruits have been so low as to leave little profit, and the apple orchard has been, in some cases, only a bill of expense. The peach buds are now swelling, and it is easily seen which are the live buds, even without cutting, from their bright, healthy appearance. Of the hardier kinds, such as the Alexander, Hale's Early, etc., there will be more than the trees should bear, while of the tender varieties such as the Early Crawford, there will be a fair crop, unless, of course, some disaster yet befalls them.

THE PRIMULAS.—Those who have chosen the Primulas will, we think, be rather pleased than otherwise to know that they are to receive, instead of *P. Sinensis*, two plants of the hardy primroses, viz.: *P. Elatior* and *P. Officinalis*. But, lest any one should be disappointed, we have ordered one plant of the Storm King fuchsia to be added to the package. We, however, make this change very reluctantly, and only because of the failure in securing a sufficient number of *P. Sinensis*.

THE LECONTE PEAR on our grounds is growing famously, but so far has borne no fruit. Mr. J. S. Brown, of

the Illinois Horticultural Society, has a tree five years old, and fourteen feet high, which has only borne two pears; he thinks it grows so fast it has not time to bear. In speaking of

SPRAYING TREES, the same gentleman said he had found that a much weaker solution must be used for plums and peaches than for apples; indeed, the leaves of the peach are almost too tender to endure the application. It was tried in southern Illinois, and the leaves all dropped.

THE EARLY VICTOR GRAPE, which was distributed by our Association in 1886, mildewed badly last year at Cottam, County of Essex. So reports Mr. W. E. Wagstaff, of that place.

STACHYS.—One of our French exchanges, the *Bulletin d'Arboriculture*, says that Monsieur Witte, horticulturist, distributed last spring quite a number of these tubers for testing. Out of twenty-one reports, seventeen are wholly favorable to its cultivation as a vegetable for table use.

THE YELLOWS.—Mr. J. H. Hale, of Connecticut, is a firm believer in potash as a cure for this terror of the peach grower. He says, in a paper read before the Massachusetts Horticultural Society, that if a tree was but slightly diseased he would head it back closely, apply from five to ten pounds of muriate of potash, and cultivate well and often. If badly diseased, he would cut away two-thirds of the top—in fact, all the small branches—and shorten in the main ones to within two feet of the trunk, and apply still more potash and from four to six pounds of nitrate of soda to stimulate new growth at once. In most cases, he says, a new and at least apparently healthy growth will take place, and the tree to all appearances be as well as ever; and while it may not be cured, who cares, so long as it lives and produces fine healthy fruit abundantly, and

none of the trees near it seem to be any the worse for retaining it. If Mr. Hale is correct in this, it is very important for us peach growers to know it, for we are every year sacrificing scores of beautiful peach trees just because one or two limbs are beginning to show some slight indications of disease.

THE SPARROW.—The following recipe for destroying the English sparrow is quoted in the *Garden and Forest*: "Dissolve arseniate of soda in warm water at the rate of an ounce to a pint; pour this upon as much wheat as it will cover (in a vessel which can be closed so as to prevent evaporation), and allow it to soak for at least twenty-four hours. Dry the wheat so prepared, and it is ready for use." It should be distributed in winter in places where the sparrows congregate, but where domestic fowls will not be endangered, and a quick decrease in their numbers is sure to follow. It is further stated that they spread with such rapidity as to cover the surface of the United States and Canada, further and further westward, at the rate of 500,000 square miles yearly, and so numerous have they become in Providence, Rhode Island, that the sexton of St John's church took 970 eggs and two cart loads of nests at one time from the ivy upon the church. These warnings should stir up Canadian farmers and fruit growers to be on guard against a bird whose record is so ill.

FOUR HARDY APPLES.—Mr. J. L. Budd says that only four varieties of apples are recommended for general cultivation in the northern part of the State of Iowa, viz.: Duchess, Whitney, Tetofsky and Wealthy, and the latter only for the most favored portions. He speaks very favorably of the prospective usefulness of many of the Russian varieties, but as yet he considers it too soon to attempt a selection.

Superior Color and Quality of our Apples.

A WRITER in *The Garden* discusses the question of color in apples, and regards it as doubtful whether a highly colored stock has any influence upon the scion in this regard. He thinks, however, that sun heat upon the roots is an important factor in producing color, and therefore that they should be encouraged to grow as near the surface as possible. He says: "We should like to know from North American apple growers, whose fruits are so superbly colored, whether they have so much heat atmospherically that they can afford to permit a deep rooting. . . . In any case, the Americans do beat us in the production of color, etc."

In our opinion, the difference in color between English and Canadian or American grown apples, is owing almost wholly to the difference in the amount of sunlight at the time of ripening. The mists of England are proverbial, while the clear sunny skies of Canada rival those of Italy. Apples, even after they are picked, if left out in full exposure to the sun, will color rapidly; and on the other hand, apples growing upon the interior of the tree are often wholly lacking in color.

Another writer, an apple salesman in Covent Garden, who during the month of December last, handled some 16,500 barrels of apples from America, says of the stock: "Permit me to say that they (such apples) could not be grown in England, and that the worst apples I am at present receiving from America are superior to the best of any I am getting from the home country."

Surely in all this we see a reason for persevering in caring for our apple orchards, for if we can get up a reputation for our special brands we must in most cases succeed in the British market, and should not be too much cast down by such unfavorable experiences as those of the season just past.

How to Graft.

L. H. BAILEY, in his book on apple culture, gives these directions for grafting: In May, just as the leaves are pushing out vigorously, saw off the limb to be grafted where it is an inch or less in diameter. Trim the stub edges smooth and slit horizontally to the depth of about four inches, not more. When the scion is prepared ready for setting it should comprise three buds. The lower end is cut wedge-shaped, to fit into the slit, and on one side of the wedge part should be left one of the three buds. When the scion is set this bud will be deep down in the cleft and covered with wax, but, being nearer the source of nourishment than any others, it will be the most likely of all to flourish, and it will readily push through the wax. The scion is set in the cleft by exercising care that the inner surface of its bark matches the inner surface of the bark on the stub. Wax the whole over carefully and thoroughly, leaving no crack exposed. Two pounds resin melted with one of beeswax and one-half of tallow, makes an excellent wax. As soon as melted pour it into cold water, and when it cools work it with the hands until nearly white. Whenever the wax is handled the hands should be greased with tallow.

The Empire Produce Company.

THIS is the name of a stock company now being formed in Toronto to conduct a brokerage and commission business for the sale of produce such as butter, cheese, and fruits, to wholesale merchants in Great Britain, and also for the sale of such goods to dealers and distributors in Canada.

As fruit growers we shall be glad if any better opening is made for the disposal of our fruits both here and in Europe; and if this company, by having a representative in Great Britain, making direct sales to wholesale fruit merchants in the inland

towns, can avoid for us the gluts and consequent ruinous sales such as were made of our apples last December in Liverpool and London. Mr. Mr. A. McD. Allan, the President of our Association, who has already had such large experience in this very line, will probably be the representative of the company in England.

We have also had much dissatisfaction with the sales of our fruit in Toronto by dealers who sell privately, but make returns to us growers at a nominal wholesale price, less commission. This company, by selling fruit in open competition to the highest bidder, will also be to our interest.

Varieties of Strawberries.

The sixth annual report of the Ohio Experiment Station contains the report of the horticulturist, Mr. W. J. Green, upon small fruits.

Among a very large number of strawberries tested we notice the following results:—*Alpha*, not worth retaining, because little earlier than the *Crescent*, no larger berries, and much less productive. *Bidwell*, unworthy of cultivation, because it overbears, matures its fruit badly, which also colors slowly, and often rots before it ripens. *Bubach*, healthy, vigorous, prolific, fruit of good form and color, but of medium quality; a promising variety for commercial growers. *Cumberland*, a most satisfactory kind for amateurs, but yielding only about one-quarter the amount the *Crescent* does. *Crescent*, very valuable, and takes the lead as a market berry where berries of second rate quality are still in demand. *Itasca*, productive, fruit small but of excellent quality. *Jessie*, one of the most satisfactory varieties of recent origin; plants vigorous, healthy and productive, while the fruit is large and showy. *May King*, an established standard variety; not equal to *Crescent* in productiveness. *Ontario*, differs little from the *Sharpless*. *Sharpless*, profitable in but

few sections, owing to comparative unproductiveness and tender blossoms; requires good soil and extra attention. *Wilson*, valuable in some sections, but less planted than formerly owing to rust of foliage.

The Black Knot.

THIS troublesome fungus is becoming very common in southern Ontario, and by the majority of farmers is so much neglected that careful growers are much discouraged about the ultimate riddance of it. From the plums it has spread to the Kentish Cherry trees, which are rapidly being destroyed wherever left in neglect. The writer has tried as faithfully as possibly to keep the knot cut off, going over the trees with a water tree-pruner and afterwards burning all the trimmings. But this method is very hard upon the trees, and if the application of any liquid to the parts affected would work a cure, we who are engaged in plum and cherry culture would be very glad to know it.

With this end in view the horticulturist at the Massachusetts Experimental Station has been testing three substances, viz.: linseed oil, turpentine and kerosene, with considerable appearance of success. The applications were made with a brush three different times during the Summer, and in the Autumn microscopic examinations were made, and it was found not only that there were no spores in the warts, but in fact that the sacs (*perithecia*) were not developed enough to produce spores before the warts were destroyed by the remedies. The linseed oil is counted the best because it is not injurious to the healthy bark of the trees when it runs over upon it, while both the turpentine and the kerosene were destructive to the branch wherever they came in contact with it.

Judging Fruits.

AT the late exhibition in Ocala, Florida, a scale of 100 points was

used in judging oranges. Ten points were given to each of the characters, of which five were grouped as "physical" and five as "juice" characters.

It is high time that the subject of judging fruits at fairs was fully discussed at our meetings, and a committee of our best pomologists ap-

pointed to draw up a scale of points to aid judges in estimating the comparative merits of our apples, pears, grapes and other fruits.

Mr. Thomas Beall, of Lindsay, has promised to contribute a paper for our Summer meeting under this head, and we hope the subject will at that time receive full consideration.

QUESTION DRAWER

The Tree Cricket.

33. THREE pieces of Cuthbert raspberry canes affected by some kind of borer, of which I have seen no account in print. This borer, as you will see from the enclosed pieces of cane, lays its eggs one season to hatch in May or June of the next. Last season was the first we noticed them, and we at once cut all we could find and burned them; but this season, they are, if anything, worse, and we would like to know

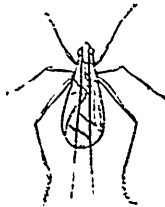


Fig. 36.



Fig. 37.

what to do to get rid of them. Can you, Mr. Editor, or some of our professors, enlighten us?—EDGAR HUSBAND, Cairngorm.

The raspberry canes were duly received. The injury is done by the depositing of its eggs in the Autumn, by the Tree Cricket, known to botanists as *Ecanthus niveus*. The female beetle is furnished with a long ovipositor, by means of which she makes an oblique opening half way through the cane, and there places one of her yellowish, semi-transparent eggs; this operation she continues, placing the eggs neatly side by side, in number anywhere from five to fifteen. These eggs are easily exposed to view by splitting the stem (see fig. 38), and

are quite interesting subjects for the microscope, about one-eighth of an inch in length and having a peculiar granulated head. About midsummer the young insects hatch out. The perfect insect is a little more than half

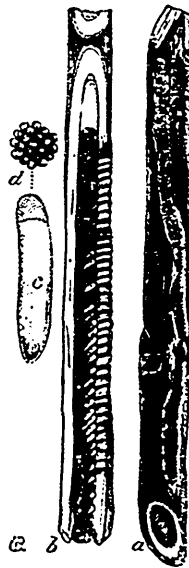


Fig. 38.

an inch long, and is shown in our illustrations, fig. 36 representing the male, and fig. 37 the female. Both are lively fellows, but the males are musical, chirping merrily all day.

Canes affected are weakened so that the crop is materially affected, many breaking off completely with the weight of foliage in the spring.

We have often found the young wood of the peach and apple affected, but to no serious extent, by the same insect. The only remedy yet suggested worth using is the one our correspondent has been doing, viz: to cut off the limbs that are stung, and burn them up, eggs and all.

For more careful details concerning this insect, see "Saunders Insects Injurious to Fruits," 2nd edition, p. 309.

Strawberries in Shade.

34. CAN strawberries be raised successfully beneath trees?—W.A. BROWNLEE, *Mt. Forest.*

No. Strawberries must have open ground for successful cultivation.

Duty on Garden Seeds and Nursery Stock.

35. CAN you tell me what is the duty, if any, on garden seeds and nursery stock?—C.B. PARKER, *Mt. Brydges, Ont.*

Major Anderson, surveyor, H.M.'s Customs, Grimsby, says garden, field, and other seeds for agricultural purposes—not otherwise provided for, when in bulk or large parcels—fifteen per cent. *ad valorem*; when put up in small papers or parcels, twenty-five per cent.

The Bud Moth.

36. FOR some years an insect has injured my apple and other fruit trees by laying an egg in the bud. In Spring, it hatches, and the bud expands and glues the young leaf tips together, preventing growth. Within this I find a small red worm which matures in a few weeks, then by a small silken thread descends to the ground. In vain have I searched all my entomological works for a description of this pest. Would you, Mr. Editor, or some reader of your instructive HORTICULTURIST, name this insect and suggest a remedy for its increasing depredations?—FRANCIS COLEMAN, *Hamilton.*

Reply by James Fletcher, Entomologist, Experimental Farm, Ottawa.

I quite agree with you that the moth mentioned in Mr. Coleman's letter, is *Tmetocera ocellana* and perhaps after all it may have the habit of occasionally letting itself down by a silken thread. Of course it gathers

together the leaves amongst which it feeds with this material. I should refer him to Saunders' book for the remedies, under the head of "Eye-spotted Bud-Moth." I have an idea that much good might be done by spraying a kerosene emulsion over apple trees just before the buds expand. I believe that this insect hibernates on the twigs as a larva and that it, the oystershell bark-louse, the apple aphid (then in the egg state), and many other insects would thus be destroyed. At any rate it is worth fruit growers trying the experiment.

The Pea Weevil.

37. I AM told that the pea weevil cannot endure a temperature of 15° below zero. Can you give me any definite information on this point?—G. F., *Freeman P.O.*

Reply by Prof. James Fletcher, Entomologist, Experimental Farm, Ottawa.

I am unable to find any mention of the fact that *Bruchus pisi* cannot stand a temperature of 15° Fahrenheit. I have tried in vain to get either infested peas or a temperature so low as that this year, since you wrote. However, I believe that the grain weevils *Callandra ozze* and *C. granaria* are unable to withstand low temperatures, and it is possible that *B. pisi* may also succumb to the same easy treatment. Undoubtedly the easiest and best treatment is to subject the seed to the Bisulphide of Carbon treatment, which consists of putting about a bushel of seed in any tight receptacle and then placing on the top any small vessel which will hold about half a wine-glass of Bisulphide of Carbon. This will evaporate in about twelve hours and the heavy vapor will fall down and permeate the whole measure of seed. This vapor is extremely inflammable and the operation should be carried on out of doors in a shed, and the seed emptied out in the open air away from all fire. The vessel should be kept closed for forty-eight hours when every insect will be destroyed.

Marsh Mallows.

38. Is there any way of destroying marsh mallow in a lawn without injuring the sod?
—W. A. BROWNLEE, *Mt. Forest.*

Reply by J. A. Simmers, Toronto.

I should imagine there would not be any difficulty in destroying this. Cut the plants out and apply a small quantity of salt in each place the plant is cut out.

Tulip Culture.

39. WOULD you kindly give us a few hints on tulip culture? Should the beds be prepared in the Fall so as not to require any attention in Spring? Should tulips be set in beds devoted wholly to their culture? What time should the bulbs be taken up and when replanted, etc.?

Reply by J. A. Simmers, Toronto.

The proper time to prepare the beds and plant tulip bulbs is in the Fall, and if properly prepared they need have no attention in the Spring, when you will have one of the prettiest sights the eye could imagine, shortly after the frost is out of the ground. In some gardens, beds are made consisting entirely of tulips, but very pretty effects may be made by making a bed with hyacinths, narcissus, jonquils, snowdrops and crocus, mixed, which will flower at intervals until the summer plants are ready to be set out. The bulbs need not be taken up each year, every other year will do, and if so done, take the bulbs up about three weeks after they are done flowering, dry them thoroughly in the sun, and, when sufficiently dry, the bulbs will keep splendidly until the time of re-planting—about the middle of October.

Seedless Apples.

40. I SEND with this a certificate of a new apple. Bloomless, seedless and coreless. A seedling of unknown parentage. Been producing fruit twelve years without bloom. Apple medium size, fine flavor, rich and good, seedless, solid flesh, yellow, and a good bearer. I would like to have it tried in Canada.—G. W. ROBINETTE, *Flag Pond, Va., U.S.A.*

CERTIFICATE.

Flag Pond, Va., April 28, 1888.

We the undersigned being acquainted with Mr. G. W. Robinette, and with his bloomless apple, do know that he is a man of truth, and that his apple is as he represents it to be, which produces its fruit without bloom, and is also seedless.

Signed by twelve persons, and certified by W. A. Owen, J.P.

We would be glad to see samples of this curious apple, and would like to test it. Thinking the sport very remarkable, we have submitted the letter to Prof. Panton, Professor of Botany at the Ontario Agricultural College, and his reply is as follows:

"Regarding your question re seedless apple, I have not much faith in its continuance. An apple must result from a properly developed flower, and we know fertilization has much to do with this development. See the irregular fruit of some strawberries which are not properly fertilized. The whole question seems to be of a peculiar nature and the results of an abnormal character.

"It is something I have never seen or heard of before, and as far as I can learn, at variance with the teachings of botanical science. I certainly would be very suspicious about it and have little or no confidence in the fact. You had better appeal to some of the practical veterans on the question."

Bruce's Erfurt Cauliflower.

41.—PLEASE tell me through the Question Drawer how much an acre of J. A. Bruce's Erfurt Cauliflower is worth in Ontario markets, and oblige T. R. H., *Cote des Neiges, P.Q.*

Reply by J. A. Bruce, Hamilton.

Respecting our strain of Erfurt Cauliflower we know that from \$480 to \$600 has been realized per acre, and in many instances where the area planted was from one-quarter to one-half an acre the returns were much greater than stated above. What it may be worth in the future is hard to predict. We only talk of the past.

Primroses and Polyanthus.

42.—ARE not the new primroses what we have always called polyanthus. I have some in bloom now by the side of those received, and I can't see any difference. THOS. G. GASTON, *Hamilton*.

Very near relatives, but distinct.

The primelas sent out are otherwise known as *P. officinalis* (cowslip), and *P. elatior* (ox lip), well known natives of England. *P. variabilis* (Polyanthus) is a hybrid between the primrose and the cowslip, and also occurs wild in Britain.

OPEN LETTERS

SIR,—I have had the enclosed in my desk for some time. If you care for it I had best send it to you as my memory is so bad I may forget all about it.

God has spared me to welcome the daisies again. I don't want you to think me a "doleful creature"; I'm as happy as a sunbeam. Respectfully,

April 2, 1889.

GRANDMA GOWAN.

My Shades (a reverie).

In the gloaming I sit dreaming,
'Neath my grand Catalpa tree,
Vaguely dreaming of my lost ones
Till I'm lost in fantasy.

In the hours of starry silence,
Spent beneath this leafy dome,
Shades of loved ones round me hover;
I know that I am not alone.

There sits beside me "Doneel Dido,"
Lovely, as in by-gone years;
I feel his chubby arms around me;
I feel him kissing off my tears.

And there my merry laughing Nell;
I see her in that pearly rose,
Breathing around her magic spell,
Banishing my fancied woes.

She was to me a Summer day,
My playful sportive fawn;
Her life a sacred melody,
Sweet, as the dewy dawn.

There stands "Madonna Susie Mary,"
With eyes as soft as the gazelle's,
But, ah! some jealous little fairy
Changed her to that Immortelle.

Soft strains, as from an unseen shore,
Like the swelling sigh of my Mary's
zither

I hear so oft when the day is o'er.
Is it my love or the woodland zephyr?

Hers close beside me dark-eyed Dora,
Sombre, as that dusky pine.

A mystic fragrance lingers o'er her;
I see her in that Eglantine.

At my feet is blue-eyed baby Willie,

The sweetest of the angel lot
Down from God's garden; darling Billy,
You are here, in that Forget-me-not.

And through the leaves that o'er me
quiver

I see the dear eyes looking down,
Of him who long has "cross'd the river,"
"Inheritor of unfulfilled renown;"

Partner of my joys and strife,

My love for thee knows no control.
Deem not my love will end with life;
'Tis changeless as my changeless soul.

On the threshold of two worlds I stand,

Nought but that starry veil between
My blest and I: my angel band,
We'll meet in the "Palace of the King."

The spectre moon is brightly beaming;

My shades are gone, all robed in air;
Their dewy kisses, in my dreaming,
Is shower'd on mother's silver hair.

Mt. Royal Vale.

GRANDMA GOWAN.

From Mr. J. P. Williams, Prince Edward Co.

SIR,—Since your meeting here last summer I have had to pass through the most trying ordeal of my life. My companion passed away in a moment about 1 a.m., after having been shopping the afternoon and seeing friends in Picton. She went to sleep and never again opened her eyes in this world or spoke; and just five weeks on the same day; Thursday, my eldest son was killed in that heavy wind on the 10th January; this, together with the fearful depression in the foreign apple market, has been a heavy burden to bear. I am slowly recovering just now, and I send you \$1 for the renewal of my paper. I have a new variety of white field pea—cross, I think, between Stratagem and Royal Dwarf. From eight single peas saved the first year, I counted 2,470 peas, one single vine producing 517.

X
 ODER
 LEITER

Last year I planted one-quarter pound seed and gathered seventy-eight pounds of clean peas; one single pea produced 627.—J. P. WILLIAMS, *Bloomfield*.

Direct Connection with English Fruit Merchants.

SIR,—We beg to acknowledge the receipt of the last few issues of your interesting and valuable monthly journal, and shall be pleased to know your charge for a similar advertisement to the one we enclose, which is a cutting from the *London Horticultural Times*.

We notice in your issue for February an abridgment of a letter you have received from Messrs. John Seed & Son, of Hull, which we can endorse, and at the same time we would supplement their remarks by bringing before you and your readers the advisability of direct communications with the English inland markets. Our market has hitherto been supplied with Canadian and American apples from Liverpool and Hull, thereby, of course, adding expense to your importation before they reach us, which expense certainly might be placed in the pockets of Canadian and American growers by direct shipments. Doubtless your readers have already got their eyes open to the fact that it is desirable that the grower and consumer should be brought as near together as possible, so as to avert all middlemen expenses which are not absolutely necessary.

We recognize the fact that it is now too late to ask your subscribers to make us any direct shipments this season, as it is too far advanced, but we hope to bring our name before them in your valuable paper before another season comes round. Awaiting your reply.—BUCKOLL, KING & CO., *Nottingham, Eng.*, March 4, 1888.

Liverpool Apple Market.

SIR,—Your interesting publication for February has been duly received and read with great pleasure. Since our last, SS. "Sarnia" has arrived, and the cargo she brings is, on the whole, exceptionally good, which has assisted materially in sustaining prices: poor stock, however, can only be realized at a considerable discount. We quote: Baldwins, 7s. 9d to 15s.; Russets, 11s. 9d. to 27s. 6d.; Spies, 11s. to 17s. 3d.; Various, 8s. 9d. to 15s. 9d. There is only a medium demand, and heavy shipments would completely demoralize the market. Awaiting your further favors.—WILLIAMS, THOMAS & CO., *Liverpool, Eng.*

Fruit Prospects in and Around Berlin for Coming Season.

SIR,—As might naturally be expected, the apple crop will be light; indications show a

scarcity of blossomed buds. Last season's crop being in excess, a reaction is necessary in order to restore vitality to the trees. Pear trees make a better exhibit, and a fair yield of fruit may be anticipated. I have never seen a better show for plums; the trees are fairly crowded with blossom buds. Last season the plum crop was a failure, but this season is likely to make up for the deficiency. Small fruits look well. Strawberry plants, raspberry canes and grape vines have all passed through the winter apparently without damage.

The past winter has been exceptional. The lowest point reached was only 15° below zero, and that only on two occasions, whilst during the previous season it reached 30° below zero, which was fatal to many vines and canes not protected.—SIMON ROY, *Berlin*.

The Champion Grape.

SIR,—In 1887 my Champion grape vine took a rest by coming out in leaf first June, and bearing a very light crop. This year it has regained its ascendancy by ripening more than 150 pounds of grapes.—FRANCIS COLEMAN, *Hamilton*.

Encouraging.

SIR,—It is with much pleasure that I again send you my annual subscription for THE HORTICULTURIST, which I hope may increase in circulation, as well as it has in usefulness, for it is an honor to our Ontario Fruit Growers' Association to have such a journal, giving the fruit growers an opportunity to communicate their experience in different subjects enlightening one another in a very friendly manner, and also encouraging every attempt at fruit raising and home adornment. The latter is needed badly enough in some parts of Ontario, for in some places you will find nothing but a few fruit trees, and some currant and gooseberry bushes struggling for an existence amongst grass and weeds, with no attempt at making home attractive by the addition of a few evergreens or ornamental shrubs. Men who are very well off and have fine houses, are as slow, and some of them are slower, than they of moderate means are in making beautiful. A few dollars well spent each year, will soon change the appearance of most farms, and will add much to its value. If our farmers generally could be induced to pay more attention to small fruits, and even a good vegetable garden, it would help to lessen the doctor's bill in many a house, and I think that for all the extra time that it takes to keep a small garden in order, that the time so spent pays better than buying your supply from the fruit dealer.—J. M. WATERS, *Maple Grove, Fernhill, Ont.*

OUR BOOK TABLE.

New Books.

THE ILLUSTRATED DICTIONARY OF GARDENING, a practical encyclopedia of horticulture. This is the most complete work of the kind ever published, illustrated with over 2,000 engravings and containing full information about plants, trees, shrubs, fruit, vegetables. It is accurate both from a scientific and a practical point of view. It is published in seven handsomely got up volumes, at \$3.00 each, and may be ordered through this office. The agent for the U.S. and Canada is Mr. Jas. Penman, 12 Day Street, New York City.

INSECTS INJURIOUS TO FRUITS, by William Saunders, F.R.S.C., F.L.S., F.C.S., Director of the Experimental Farms of Canada, etc. Illustrated with 440 woodcuts. Second edition, Philadelphia: J. P. Lippincott & Co., 1889. Most of the scientific treatises upon Entomology are clothed in such technical language that they are wholly unattracting to the ordinary farmer or fruit-grower; but it has remained for Prof. Saunders in a most unique manner to simplify this science so that the most ordinary reader can read it with interest and be able to identify all the insects which usually come in his way and learn how to destroy them. This second edition is not only cheaper than the first edition, but it is also more valuable, for it has been most carefully revised by the author and made as complete as possible. The price is only \$2.

Reports.

THE FORESTRY REPORT, 1887-8. *Compiled at the instance of the Government of Ontario by R. W. Phipps, Toronto.* Since the Fruit Growers' Association of Ontario has for one of its objects the diffusion of a knowledge of forestry among the farmers of Ontario, we very gladly notice this fifth report of Mr. Phipps on this subject. It is a volume of 98 pages and contains articles upon such subjects as English and Scotch Forestry, Forest Management, Forest and Rainfall, Increasing the Durability of Timber, Treatment of Parks, Pruning of Forest trees, and Varieties of Trees to Plant, etc. The interesting descriptions of the old country forests showing the high value at which they are held by the expense bestowed upon their preservation sets forth in bold relief the reckless destruction to which our noble heritage of forests is being yearly subjected. That forests influence rainfall has been disputed of late, perhaps by those who are pecuniarily profited by their destruction; but this position is well maintained by Mr. Phipps, who shows, both from a meteorological standpoint and from actual facts, that forests really do very largely affect the rainfall of a country, and that upon them consequently depends, to the same extent, its prosperity.

The remarks concerning the spoilation of the beautiful natural groves in the vicinity of Toronto, which, with proper treatment, might have been converted into magnificent pleasure grounds for the health, amusement and relaxation of the citizens of Toronto during ages to come, are well worthy of the careful attention of the voters, who should see to it that such public officers are elected as have a proper appreciation of the value of these natural forests and know something about turning them to good account.

A RECORD of some of the work done in the Botanical Division, Bulletin No. 8, U.S. Dept. of Agriculture, Washington, 1889.

PEACH YELLOWS, a preliminary report by Erwin F. Smith, B. Sc., special agent. Prepared under the direction of the Commissioner of Agriculture of the United States, 1888. As a preliminary report this volume is full of interest to peach growers, although so far no certain explanation of the nature of the disease, or of the best means of curing it, is discovered. The engravings show the spread of the disease in individual orchards, the spread throughout the United States and Canada from a small section of country about Philadelphia, where its presence was first reported, and pictures of trees and fruit affected. Altogether, the report chiefly amounts to a history and extent of the disease, and to a demolition of most of the favorite theories hitherto promulgated. Regarding the cure of peach yellows by use of potash or phosphates, he considers that the evidence seems to warrant that such treatment neither cures nor prevents the disease. See Report, p. 40.

EXPERIMENTAL FARMS. Reports of the director, Prof. Saunders, and his able assistants, for 1888.

THE reports of the horticulturist, Mr. W. W. Hillborn, and of the entomologist, Prof. Jas. Fletcher, from year to year, will prove of increasing interest to us fruit growers.

Catalogues.

HENDERSON'S FARMERS' MANUAL, 1889. Peter Henderson & Co., 35-37 Cortlandt Street, N.Y. Grasses, Grains, etc.

GEO. H. WILLIAMS, Thorold, Ont. Price List of Fruit Basket Packages.

LEWIS ROESCH, Fredonia, N.Y. Grape Vines, Small Fruit Plants, etc., 1889.

JOHN LITTLE, Granton, Ont. Small Fruits. GEO. S. JOSSELYN, Fredonia, N.Y., 1889. Small Fruits Plants and Grape Vines.

J. T. LOVETT, Little Silver, N.J., Spring 1889. Nursery Stock.

S. H. MITCHELL, St. Mary's Ont. Price List Garden and Field Seeds.

J. A. SIMMERS, 147 King Street East, Toronto. Seeds.

A. GILCHRIST, West Toronto Junction, Ont. Evergreens, Roses, Clematis, etc.

BEST MARKET VARIETIES.

	PER DOZ.	PER C.	PER M.
Cuthbert Red Raspberries.....	\$ 25	\$1 00	\$5 00
Mammoth Cluster Black Caps, tips	25	1 25	10 00
Mammoth Cluster Black Caps, yearlings	50	2 50	20 00
Gregg Black Caps, later, larger, firmer	40	1 50	12 00
Raby Castle Currants, fine grower, 2 yrs., great bearer.....	1 00	4 00	35 00
Houghton Gooseberries, 2yrs. and 3 yrs.	75	3 00	.....
Downing Gooseberries, larger, fruit 2 yrs.	1 25	8 00	.....
Concord Grapes, 2 yrs.	75	4 00	35 00
Worden, Delaware, Brighton, Pocklington, Salem, Lindley, Agawam, Wilder	1 25	8 00	.....
Norway Spruce Trees, 20 to 25 in. ....	.....	10 00	.....
Cut Leaved Silver Maples, 6 to 10 ft. ....	.....	10 00	.....
Russian Mulberries, 5 to 9 ft. ....	.....	8 00	.....
Ash, 6 to 7 ft., nice .....	.....	3 00	.....

Many other varieties of Trees, Small Fruit Plants, and Ornamental Shrubs. (t f)

E. MORDEN, Niagara Falls, South, Ont.

ORCHARD OR FOREST PLANTATION.

A competent planter and farm manager will take an equipped farm on shares, or other terms, where allowance will be made for an orchard or timber plantation, or will contract to plant and care for the same, replace all losses, and guarantee a fixed number to live and do well for three years.

ORCHARDIST,

(Feb. t. f.) Care HORTICULTURIST.

NOTICE.

To all who intend planting out Fruit of any kind:

It will pay you to send a list of your wants to us, and we will give you as good prices as good and reliable stock can be got for in Canada, and guarantee your Trees and Plants to come in good order.

Plants, Vines and Small Trees Mailed to all parts of the Country.

The New Apple, Princess Louise, a specialty. Niagara Grapes at low rates.

An assortment of new Fruits. Send for Catalogue and prices to

SMITH & KERMAN

(Successors to A. M. Smith),

ST. CATHARINES, ONT.

ROSES, GRAPE VINES, ETC.

HYBRID PERPETUAL ROSES,

About 100 varieties, including the hardiest and best kinds, good strong plants, worked low on Manetti.

Price 25 to 50 cents each, \$3.00 per dozen, \$20.00 per hundred.

GRAPE VINES, Rogers' varieties, etc., 25 cents each, \$2.00 per dozen, \$15.00 per hundred.

CURRENTS, Fay's Prolific, extra strong plants, 20 cts each, \$1.50 per dozen, \$10.00 per hundred. Raby Castle, strong plants, 75 cts. per dozen, \$5.00 per hundred. Gooseberries, Raspberries, Strawberries, etc.

Price List on application.

S. BURNER,

HAMILTON, ONT.

A NURSERY AT YOUR DOOR.

TREES, VINES, PLANTS.

Just the kinds wanted. Strictly first-class.



SPECIALTIES—The Globe Seedling Peach, Russian Apricot, Eaton, Vergennes and Worden Grape Vines, Jessie Strawberry, and other New and Old Sorts.

Your order solicited at the Central. The Mailing Department receives special attention. See Free Catalogue before placing your orders.

A. G. HULL, Central Nursery, St. Catharines, Ont. (Feb. 4 t)

NORWAY SPRUCE.

6 to 8 in. transplanted, - - - \$3.00 per 100
8 to 10 do. - - - 4.00 do.

A. DAWSON,

Mch 3t

MOHAWK P. O., ONT

NORWAY SPRUCE

IN LARGE QUANTITIES.

Also ROSES CLEMATIS.

Climbers, Shrubs, Dahlias, Herbaceous Plants etc., etc. Send for Price List.

A. GILCHRIST.

Removed to WEST TORONTO JUNCTION. 3-3t.

Strawberries for \$1.00 each Collection.

- No. 1.—5 Eureka, 5 Bubach, 5 Jessie, 5 Gandy's Prize, 5 May King.
- No. 2.—5 Eureka, 5 Gandy's Prize, 5 Haverland, 5 Cloud, 5 Mammoth.
- No. 3.—5 Eureka, 5 Monmouth, 5 Gold, 5 Pineapple, 5 Warfield.
- No. 4.—5 Eureka, 5 Burt, 5 Jessie, 5 Belmont, 5 Monmouth.

I will send the above four collections, fourteen varieties of strawberries, by express, for \$3.00. They embrace from the very earliest to the very latest varieties, and they will be packed and labeled in the most careful manner.

A free circular giving a description of the new seedling "Eureka" now for the first time offered, and other new kinds, with the most valuable of the old varieties. This circular will be ready about the middle of February. Send for it.

3-2t.

JOHN LITTLE, Granton, Ont., Can.

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