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Canadian Horticulturist

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THE VERGENNES GRAPE.



OUR various sorts of grapes might well be classified, as our apples and pears are, according to their keeping qualities. Some varieties, as, for instance, the Lady, are fall grapes, and need to be eaten soon

after their time of ripening, or they will begin to decay; others, like the one under consideration, are winter grapes, and may, with a little care, be kept in good condition all winter. The Vergennes, although it ripens with the Concord, is not in prime eating condition until the month of December, by which time it has mellowed and improved in flavor; it reaches its best in February, and may be kept much longer with due precaution. This is an important point in its favor when we remember the acknowledged virtue of the grape as a medicinal agent; and in planting varieties for family use we need not only to consider variety of color, but also what selection will give us successive supplies for our table. For winter red grapes, then, we may plant the Vergennes and the Salem, the latter

being Rogers' No. 22, and possessing keeping qualities nearly equal to those of the former.

The Vergennes is a choice seedling which sprung up in Mr. Wm. E. Green's garden, at Vergennes, Vt., after which place it is named. The first fruit was borne in the year 1874, and in the winter of 1880-1 it was exhibited at various horticultural meetings, receiving high commendations, especially for its keeping qualities.

The following is a description of the grape:—*Clusters* medium to large and somewhat loose; *berries* large, round, holding firmly to the stem; *flavor* rich; *skin* very thick, tough, red, covered with a beautiful bloom; *flesh* free from hard pulp, of pleasant but not rich flavor.

The vine is of the Labrusca family, and has the vigor and health so characteristic of it. That it is hardy enough for most parts of Ontario seems to be almost certain, for it has been successfully grown by W. Meade Pattison, at Clarenceville, Province of Quebec. Mr. S. D. Willard, of Geneva, N.Y., gives his experience with it of the past season as follows: "I find the Vergennes coming fully up to my expectations. As the

vines get age they seem to be more productive, and the clusters more full. It is one of the most superior keeping grapes we have."

Mr. G. W. Campbell, of Delaware, Ohio, also speaks favorably of it in the "Seventeenth Annual Report of the Michigan Horticultural Society, p. 226, where he says:—"The Vergennes is a handsome red grape, which has never failed here to bear and ripen well, though a little variable. It has generally ripened about with the

Concord, but the past season it was a week or ten days later. This I attribute to the heavy crop, as it was allowed to over-bear. It however ripened both fruit and wood well. It has shown no rot, but the foliage has mildewed a little in unfavorable seasons."

Wishing that this grape should be still more thoroughly tested in all parts of Ontario, our Association has placed it on the list of plants for distribution in the spring of 1889.

## A FEW HINTS ON LANDSCAPE GARDENING.—II.

*"Let not thy front look a-squint on a stranger, but accost him right at his entrance. Uniformity also much pleaseth the eye; and 'tis observed that freestone, like a fair complexion, soonest waxeth old, whilst brick keeps her beauty longest."*—Fuller.

THE Italian style of architecture was much employed some thirty years ago, and had many points of excellence. Additions could easily be made to the building without marring the unity of the design; while the arcades, balconies and projecting eaves gave character to a style which has been deservedly popular for country residences, because harmonizing so well in picturesque beauty with the rural landscape.

But it is not with a view of drawing attention to the style of architecture that we introduce this engraving of an Italian villa, but rather to impress our readers with the simple beauty of its surroundings. Here, as at the grounds at Ashton, the large growing trees are chiefly

planted at the sides and rear, while the front has little to obstruct the view; however, instead of a simple lawn of green sward, which indeed is, in our view, most to be commended, we have here a few choice flowering shrubs near the front door where, of course, their beauty is seen to the very best advantage. This may be excusable in case of very choice shrubs whose beauty of foliage makes them attractive objects even when not in bloom, and where there is an extended lawn beyond the carriage drive. Generally speaking, shrubs should be planted either in connection with the flower garden, or grouped with herbaceous plants along the borders of walks and drives, and in remote corners of the yard.

They may be also employed as underwood to fill in the groups of trees about the grounds, or to break up into easy regularity a view otherwise too stiff and regular. No

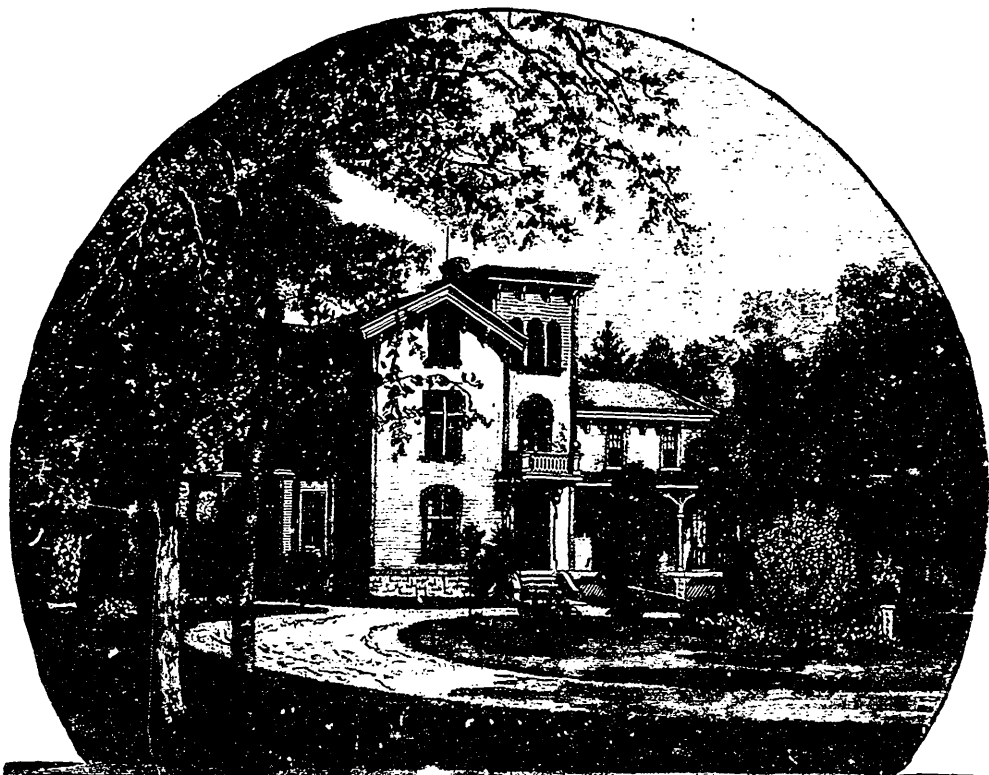


FIG. 12.—ITALIAN VILLA.

inflexible rule can be laid down for such details of planting; so much must depend upon the size and situation of the place, and upon the taste of the planter.

The following are some of the more desirable shrubs for planting in Canada, arranged according to the months of flowering: April—Forsythia, Japan Quince, Missouri Currant; May—Wild Thorns, Azaleas, Lilacs, Tartarian Honeysuckle, Weigela, Syringa, Spiraeas and Flowering Almond; June—Red-Twigged Osier, Winterberry, Snowberry, Snowball, Rose Acacia; July—Fringe Tree, Elders, Privet; August and September—Alder-leaved Clethra, Strawberry Tree, Hydrangea Paniculata. There are many others, but these are the most popular. The Winterberry, or Black Alder, as it is also called, is far more attractive in fruit than in flower, the bright red berries hanging on the bushes nearly all winter, and being particularly beautiful.

Lawn vases, with Agaves or stiff foliated exotics, are suitable on the verandah, or very near to the house;

but out on the lawn among the shrubbery they are out of keeping with their surroundings.

The great importance of water in the attractiveness of a country seat is again well illustrated in the engraving before us, where a delightful walk leads the visitor along the bank toward a pleasant summer-house, from which a delightful prospect is before him. How many such possibilities are afforded us in Canada along our beautiful rivers and lakes, the advantages of which are wholly ignored by the residents in their neighborhood. We have in mind just such a lovely situation, the beauty of which has been wholly lost upon its unappreciative possessor. Inheriting broad acres of land, he had built an elegant house in a choice position on the shores of our beautiful lake Ontario, and having a bank on one side sloping down to a picturesque inlet; but he had so placed his barns, stables and out-buildings as to most effectually hide the pretty landscape, and blot the beauty of the whole situation.

### CHOICE OF TREES FOR AN ORCHARD.

**A**T this season of the year, when many of our readers are being called upon by agents of various nurseries, a few words of advice may prove valuable.

First, with regard to patronizing the much-abused itinerant tree agent, we do not take the extreme ground which some do. There are, it is true, many rogues abroad who travel upon their own responsibility, and

fill their orders with the culls from any nursery, refuse which would otherwise have been consigned to the brush heap, and which they could purchase for a trifling sum. Such men should not be allowed inside the door. The first question should be: "What nursery do you represent?" And if it is a reliable firm," the next should be: "Show me your certificate." This precau-

tion being taken, and the intending purchaser satisfied on the point of reliability, we see no reason why small orders should not be given a nursery through an agent. Certainly, a much higher price must be paid for stock so purchased than if bought direct, but on a small order the difference would be about equalled by the express charges, cartage, etc. In large orders for stock to plant an orchard, or a lawn and garden, much better terms can be had by dealing directly with some good nursery, either personally or by mail; and a better class of stock may often be secured.

Secondly, regarding varieties. The most common mistake is in buying too many kinds. Reading over a descriptive catalogue, or looking at the beautiful coloured plates shown by the agent, whose voluble tongue is naturally enough rendered the more active by the desire of securing a large order for his employer, the farmer is led to think he must have a few of every one of the much lauded kinds. For the home garden a collection of various kinds of fruits, new and old, is a source of much pleasure; but in the commercial orchard many varieties are but a hindrance to success. Upon this points a Massachusetts orchardist makes the following sensible observations:

"It is not unusual for a farmer to have, say, thirty or forty barrels of apples for sale made up of ten or fifteen varieties. Aside from the trouble of keeping these numerous sorts separate, and the bother with the comparatively large quantities of odds and ends which are left when filling the barrels, there is often difficulty in finding a market for

some of the sorts which go to make up the collection. Buyers sometimes refuse to take apples which are really good, but with the qualities of which they are not familiar. There are a few sorts which always sell better than others, and which can usually be worked off, even when the market is glutted, at something like a reasonable price. The list varies somewhat in different localities, but it is easy to find which are the standard sorts in any given place. In this section (Western Massachusetts) the Baldwin is by far the most extensively sold, though the King, of Tompkins County, is eagerly taken at a higher figure. If I were to put out 100 trees to furnish apples for market, I would choose 55 Baldwins, 40 Kings and 5 Westfield Seek-No-Furthers. The two first-named I would sell to shippers, and work off the latter among the keepers of restaurants and fruit stands in the nearest cities. I do not claim that in point of quality these are the best varieties of apples, neither do I believe that for all localities this is the best selection, though it is certain that these sorts succeed in a large portion of the country. And I do not recommend this collection as at all adequate for supplying the family with fruit. But of the many kinds I have grown, and the still larger number which have come under my observation, I believe that for market purposes in this region the three which I have specified are by far the most profitable."

Of course the remarks about the most profitable varieties must be considered with reference to locality; and those which succeed in Massachusetts might be wholly unsuited to many parts of Ontario. The Baldwin, King and Westfield Seek-No-Further succeed well in Southern Ontario. The Baldwin is unequalled for productiveness, unless by the Greening, frequently yielding eight

barrels to a single tree; the King is a very scanty bearer, otherwise its large, beautiful fruit, so well flavored and so delicately perfumed, would stand far ahead of every variety, either for home use or for market. No apple, except the Newtown Pippin, now commands so high a price in the English market.

Among other profitable market varieties for Southern Ontario, we find from this season and last season's shipments to Britain, that the Gravenstein, Ribston, Blue Pearmain (also a scanty bearer), Blenheim Orange and Golden Russet bring the highest prices. Large, fine colored apples are much sought for, but the Northern Spy, though in this respect it is all that could be desired, has disappointed us. It is tender, and subject to rapid decay under unfavorable circumstances; and in consequence it arrived in Covent Garden wet and slack, though most carefully and tightly packed.

The old "Greening" is constantly advancing in the estimation of the English public. Although, as a rule, colored apples are sought for, this variety forms a worthy exception, and promises to bring even better prices than that staple variety, the Baldwin, of which probably more barrels are exported than of any other one kind.

The whole business of foreign shipments has this winter received a most decided reverse. About a million barrels had gone forward, up to Christmas, piling up the Liverpool docks until the market thoroughly broke down, and the best apples could scarcely be sold for enough to pay charges.

We still have faith in apple culture as one of the best farm crops, but have learned that it is unsafe to "put all one's eggs in one basket," and that the wisest way is to divide one's ventures.

### BOTTLING GRAPES.

M R. W. COLEMAN writes to the *English Garden* as follows on this subject:—

Any dry, airy, well-ventilated store-room will keep grapes, the great point being the maintenance of an equable temperature without the aid of fire-heat, which is not an essential so long as damp can be kept out and the temperature ranges from 35° to 45°. If bottles are used they should be placed in racks tier above tier, secured to the walls or partitions according to the number of bunches, whilst very small quantities may be stored away in glazed closets running

along one end of the room when the latter is required for choice pears or general purposes. When in position each bottle should lean forward at an angle of 45°, space being allowed for the bunches to hang without touching the rack or each other. Then those who would keep an insidious enemy, mould from damp, under hand, may place a small slow combustion boiler outside for warming the internal pipes when absolutely necessary. So far good. Now for

CUTTING THE GRAPES, which, by the by, must have been thoroughly ripe by the middle or end of Septem-

ber, otherwise the effort to keep them fresh and plump will be disappointing and worse than useless. Having fixed and filled a sufficient number of ordinary wine bottles with soft water, and warmed the pipes for a few days to dry the walls and floor, on a fine calm day with a pair of pruning scissors cut the grapes with all the wood close back to the pruning bud; convey them steadily to the room, insert each piece of wood with bunch attached into a separate bottle, but carefully avoid forcing out the water in the operation. Never shorten the wood beyond the bunch, as each fresh cut converts it into a syphon, through which the water in the form of vapor passes from the bottles into the room, carrying with it more or less of the saccharine matter stored up in the berries. In the arrangement of the different varieties, late keepers like Lady Downe's should be placed most out of the way upon the upper tiers; then Colmans, Muscats, Alicantes, and those excellent varieties, West's, St. Peter's and Mrs. Pearson, should follow. It will be necessary to dry the room thoroughly before it is closed, and then the grapes will require occasional examination for decaying berries; but if thoroughly examined at the time of cutting they will keep much better in the room than in the

best managed vinery. When all the grapes are bottled they must never feel the want of water, neither must they be shaken or disturbed if it can be avoided, as waste can be made good by the use of a small long tube-spouted can suitable for passing oil into machinery. Some grape growers put a small piece of charcoal into each bottle at the outset and change the water occasionally, but all this extra care is superfluous, as many years' experience proves that the grapes keep quite as well in the original water and without the charcoal. Changing the water, of course, can do no harm, always provided the grapes are carefully handled; therefore, when a portion of the bunches have been used the bottles they occupied may be emptied and refilled preparatory to the transfer of the latest keepers. In the arrangement of the different varieties I may say Muscats and Gros Colman should occupy the driest and best ventilated part of the room, especially when the bunches of the latter are large and the shoulder stalks are green and fleshy. Again, in using them the largest clusters most subject to damp and mould should be taken first, as smaller pieces through which the air can pass freely are best adapted for keeping.

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### FRUIT GROWING ON CLAY LAND.

By B. W. PARKER, TYNESIDE, HALDIMAND CO., ONT.

IN giving the result of my experience in growing fruit on clay land, I will state that my land is a heavy clay loam; fifty bushels of oats and thirty bushels of barley would be about the average yield to the acre this year; peas as high as thirty bushels; fall wheat, when a good crop, twenty-five to thirty bushels. I was told when I purchased my farm, that

fruit would not do well on this land. However, I concluded to try it; I looked more to the climate than to the land. Now I am glad to say, after six years' experience, that we can produce choice fruit of most kinds. I have twenty-six varieties of apples in full bearing, which makes a good family orchard.

Pears are peculiarly well adapted



to this soil and climate. I have planted the Bartlett and Duchesse; have fruited the former; have seven other varieties; all do well and are perfectly hardy. In my experimental garden I planted last spring twenty-one varieties of plums; twenty-three of grapes; some quinces, apricots, and eight varieties of peaches; the latter are by no means sure croppers, but when there is a large crop at Grimsby we have them too. The Concord grape does well here, and the fruit is better in flavor than when grown on sand. The Niagara is tender in the bud, more hardy in the root, but it is not a sure cropper. The Brighton I have not fruited to any extent as yet, but the few bunches we had were delicious; the flavor is all that is claimed for it—no mildew, and is quite hardy. In strawberries I do very little growing, only a few for the table; but the Downing, which I planted on a little sand bed, were not nearly so sweet as those grown on the clay. Goose-

berries do well here; I have Downing, Smith's Improved, and a large English variety, which is not the Whitesmith, if I should judge by those I saw in the grounds of our Vice-President; it was on the place when I came, and is a great cropper. I have fruited it six years and seen no mildew. In black caps I have the Gregg, Mammoth Cluster and Souhegan; the Gregg is slightly tender, but the berries are so fine and large, though not as good in flavor as Mammoth Clusters or Souhegan; the two last named are perfectly hardy here. The red berries I only grow for home use, as they are hard to start in a dry season. I have the Cuthbert, Turner, and Marlboro', the last named of which does extra well. I trust, Mr. Editor, I have not taken up too much of your valuable space, but having read so often with pleasure in the *HORTICULTURIST* the experiences of others in fruit-growing on light soils, I thought I would give the result of mine on the clay.

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### ON THE DESTRUCTION OF THE PLUM CURCULIO BY POISONS.

ONE of the most important results to fruit-growers of recent studies in economic entomology, is the demonstration of the fact that injury to plums by the Plum Curculio can be prevented, to a great extent, by spraying the trees early in the season with Paris green or London purple mixed with water. This fact, I believe, was first ascertained by practical fruitgrowers, who, finding good results from the use of Paris green against the Codlin Moth, jumped to the conclusion that the Plum Curculio could be destroyed in

the same way. At the time this was done the known facts in the life-history of the Plum Curculio did not warrant any such conclusion. In truth, the entomologists were mostly inclined to say that injuries by this insect would not be prevented by an application of Paris green to the trees. It was urged that, as the eggs of the Curculio were placed within the tissue of the fruit, the newly hatched larvæ would be beyond the poison applied to the surface. In this respect this insect differs from the Codlin Moth, which lays its

eggs upon the outside of the apple at the blossom end, in such a way that the young larvæ when eating its way into the apple is liable to be poisoned, if poison has been sprayed upon the tree.

Notwithstanding this important difference in the habits of the insects, certain fruit-growers claimed that equally good results followed the spraying of plum-trees as in spraying apple-trees. At last the matter has been made the subject of careful experiment by Mr. C. M. Weed, the Entomologist of the Ohio State Experiment Station. The results of Mr. Weed's experiments are very striking. They seem to show, so far as the results of a single season's work with a single variety of cherries can be relied upon, "that three-fourths of the cherries liable to injury by the Plum Curculio can be saved by two or three applications of London purple in a water spray (in the proportion of one ounce to five gallons of water) made soon after the blossoms fall."

No explanation is made by Mr. Weed as to the way in which the poison acts,—whether the adult beetles are destroyed before they lay their eggs, or whether the poison reaches the larvæ. During the present season we have made some observations and conducted an experiment which indicate that the former is the case.

During the latter part of the past summer my attention was attracted to a serious injury to the fruit in an apple-orchard through which I passed daily. A large proportion of the apples in one corner of the orchard had been eaten into by something which made small pits from one-eighth to one-fourth inch in diameter, and of about the same depth. On one tree nearly every apple had been attacked, and in many cases there were ten to twelve holes in a single apple. The injury was so serious as to render the fruit on this part of the orchard unmarketable.

The holes in the apples were first

observed during the latter part of August. At that time many of them were partially grown over, while others were fresh, indicating that the pest had been at work for a considerable time and was still active. As the injury to the apples resembles somewhat that caused by *Lithophane antennata*, a climbing cut-worm, that sometimes infests apples in Western New York, I at first searched for caterpillars and gave little thought to the Plum Curculios that I frequently found hiding in the holes in the apples. But after finding a considerable number of these insects in these pits, it occurred to me that they might be the cause of the mischief. Several perfect apples were then selected and placed in breeding cages, in each of which were confined several curculios. The question was soon settled: within twenty-four hours the beetles had begun to eat into the apples. They made small holes at first, but these were soon enlarged so as to form pits of the size indicated above. We thus see that the Plum Curculio is a voracious feeder, and conclude that the spraying of the plum-trees early in the season with Paris-green water protects the fruit by the destruction of the adult curculios before they have laid their eggs.

Since preparing the above I have received the following note from Mr. Weed, for publication in a journal of which I am Entomological Editor. I take the liberty of publishing it here in advance of its appearance in that place, as it confirms my conclusions.

"In referring to some experiments made by me to prevent curculio injuries, in the August number of the *American Naturalist*, the question is raised as to how spraying with poisons may have a preventive effect on this insect. I believe that satisfactory explanation may now be given. Early last June I confined an adult Plum Curculio in a jar with a large green plum, and was surprised at the avidity with which the fruit

was eaten. A large portion of the surface was gnawed out for food, and not for purposes of oviposition, and the feasibility of poisoning the adult beetles by clothing the fruit with poison clearly shown.

"But even more satisfactory breeding-cage experiments were made in Illinois by Professor Forbes, who informs me that he has found that, besides gnawing out the fruit, the adult curculio eats freely of the substance of the leaves. He adds that the curculios 'are certainly very freely exposed to destruction by poison, without reference to their habits of oviposition or the first food of the larvæ;' and that he has 'also learned experimentally that spraying the leaves with Paris green would poison the beetles completely.' Professor Forbes discussed at some length the details of his experiments, which confirmed the conclusions reached in my experiments, in an address delivered at a meeting of the Central Illinois Horticultural Society during last August (*Prairie Farmer*, Aug. 11, 1888). Professor

A. J. Cook of the Michigan Agricultural College also announces in Bulletin No. 39 similar results."

Little remains to be said except to congratulate the fruit-growers that at last we have at our command an easy means of destroying this very troublesome insect. We will add, however, for the sake of those who are not familiar with the use of Paris green upon fruit-trees, that the poison is mixed with water in the proportion one pound to one hundred gallons of water, and applied by means of a force-pump furnished with a spray nozzle. The application should be made early in the season, soon after the appearance of the leaves and blossoms, and should be repeated if the poison is soon washed away by rains.

Careful experiments have shown that there is practically no danger in the use of poison on fruit-trees in this way, as it is all removed by the summer rains before the fruit matures.

JOHN HENRY COMSTOCK.

(In *Bulletin*, No. III., *Cornell Ag. Ex. Station*, Ithaca, N. Y.)

## \* THE VEGETABLE GARDEN \*

### THE CULTURE OF CELERY.

By W. S. TURNER, CORNWALL, ONT.



A GREAT deal has been written on this subject in this Canada of ours, and there seems to be a general belief that it is quite a serious undertaking to grow celery to

perfection.

Now I want to show in my humble experience, at least, this is not the case, for it is as easy to grow as any other vegetable, has fewer insect enemies, and what is not of the least

importance to those who have a small area of ground, *it can be grown as a second crop.*

For instance, I have grown 700 heads in the space of less than 100 square feet, and nearly all as a second crop.

Where there is command of any quantity of water as it is common in many of our large towns, (for quite a number of places are now supplied with water-works) it is still a greater advantage—though I would here cor-

rect a very common error that some new beginners are apt to fall into, and that is this, that celery, being naturally a water plant, you cannot give it too much. This is a great mistake, for you can actually drown it out, kill it with kindness, "Drown the Miller," as the Scotch folks say; for instance, the past season has been exceptionably wet in Stormont Co., there has been very little need of artificial irrigation, in fact, the plants have appeared to be at a standstill for weeks at a time, the water from the heavy rains sometimes filling the ditches between the rows and inducing rot among the plants. If my garden had not been well drained I would have lost a large number of heads; even as it was my celery was not so large as in former years when there was an average rainfall.

Having bored your readers thus far, Mr. Editor, I will proceed to show the *modus operandi* of starting the seed and follow the plants right up to harvest time.

I always grow two kinds at least, viz., fall and winter celery. The White Plume for fall, and Henderson's Pink, or Sutton's Sulham Prize, for winter use. The White Plume is of beautiful appearance and is greatly in demand on account of its earliness and beauty. It will keep good up to Christmas, but the pinks or reds are superior to it in flavor and will keep all winter. There is a new candidate for public favor named Nelles' Self-Blanching; it has been grown by Mr. John Croil, one of our directors, and he pronounces it of excellent flavor.

I sow the seed in boxes in the house about the middle of March or the first of April. A raisin box cut down to about five inches deep is

about the handiest size. I usually put some fine garden soil in the cellar for the purpose in the fall just before the winter sets in. I then fill the box with soil to within an inch of the top, and if you are not careful at this stage you will lose more than half your seed, for celery seed being very small, it is apt to get too deep and either gets lost entirely, or comes up so spindling and weak as to be comparatively worthless.

I sift the soil for the upper part of the box, compact it moderately and see that it is even. Now sow the seed in rows two inches apart, and the rows half an inch wide, press the seed lightly with a piece of board the size of the box, then sift a very thin sprinkling of soil over the seed. If possible, I get a little moss off the cordwood pile, dry it, and rub it fine through the hands, and scatter a thin layer on the top, then water with a fine sprinkler and put it in a sunny window.

The seed will be about ten days or two weeks in germinating. It is then necessary to watch and see that the sun does not injure the young shoots at this stage, as they are very tender. If the sun is too strong, shade them a little till they get stronger.

When the second leaf appears, I take the box and put it into a moderate hotbed, and, as the warm weather comes, from there into a cold frame, and gradually harden them off till they will endure the weather without any protection. When the plants get about two inches high, prick them out five or six inches apart into a bed, or between the rows of beets, carrots, or anywhere so that you can cultivate them with a hand-weeder, or scratch among them with an old

three-pronged table fork; keep them well watered, and by the 1st of July they will be fine plants with good roots to them. By this time, our early vegetables such as peas, beets, lettuce, beans, early potatoes, and even old beds of strawberries have had their season, and we can make good use of the ground for our celery.

Now get two garden lines, and put them about twelve inches apart, the length you want to make your rows, having your rows four feet apart, dig your trench between the lines and about nine or ten inches deep, now put four inches of good *old* manure, and with your garden fork dig it under and mix well with the soil, put an inch or two of soil over this, and your trench is ready (which by this time is not much of a trench after all) for the plants. Now take your garden trowel, cut round your plants, and put them in about the same depth as they were before moving, they will hardly know they have been moved; though it will do them good to have a little watering

at this stage, and whenever they get too dry. They will appear to be at a standstill for quite a while after this, but they are forming new roots all the time, and getting ready for business later on. As you cultivate and scratch among them, bank them up a little at the same time by taking hold of the plant in your left hand, and drawing the earth around them with your right; you do this so as to prevent the soil getting into the heart. If you want extra fine celery and clean also, tie a soft string loosely round the plant when it is about half-grown, this will keep the leaves together and expedite the banking-up business considerably. If you are limited to room you may have your rows closer, and after the celery is about three quarters grown, place boards close on each side of the rows, and put stakes behind to keep them up. The celery will bleach just as well as if banked up to the tops, as all that is required to whiten celery is to exclude the light.

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### NOTES FROM SISTER SOCIETIES.

*Cultivation to Withstand Drought—The Bubach Strawberry—New Mode of Refrigeration for Fruits—Chemical Composition of Fruits—Needs of the Soil for Profitable Fruit Production—Fertilizers—Grape Rot.*

THE Ohio State Horticultural Society met at Troy, Dec. 12, 13 and 14, and was a great success. One point proved was the *importance of cultivation in dry seasons*. Mr. W. J. Green said that at the O. Ex. Station, irrigation had been found impracticable, the chief reason being that water is too expensive. One and one-fourth inch per acre, which is

about the amount of a good shower, is equal to one thousand barrels or one hundred two-horse loads, and costs in Columbus seven dollars and fifty cents. Mulching, too, sometimes fails. The best plan seems to be cultivation. Experiments in Illinois and Connecticut show that half an inch of rainfall may be saved per week from evaporation by stirring

the soil every alternate day. A man and horse can cultivate two and a half acres per day, equal to five acres every alternate day. If by cultivation one inch of water per month can be saved from evaporation, there need be no fear of drought except at one or two periods like the strawberry season.

Reports on *grape growing* for profit were very discouraging. The crop east of Cleveland was about five hundred carloads, and Concord realized only about  $1\frac{1}{2}$  cents per pound. Among *strawberries* the general opinion was that Bubach should head the list.

The "*Relation of Refrigeration to Horticulture and its Importance in Commercial Fruit Growing*," embodied the observations made by the essayist, Mr. Cushman, in a visit to the cold storage warehouse of the Cleveland Automatic Refrigerator Company. The fine fruits seen there leave but little doubt that in the future cold storage is going to play a prominent part in horticultural industry. It is well known that if the spores of rot can be kept from developing, organic bodies may be preserved for long periods. The main factors in doing this are coldness, absence of light, and dryness, the last of which has caused most difficulty in all systems where ice is used. The system practiced in Cleveland is briefly as follows: Aqua ammonia is reduced to an anhydrous condition; and this gas is reduced by steam pressure to a liquid state. It is then passed through pipes in the chambers, which are surrounded by dead air spaces, where it volatilizes and thus produces a low temperature. It then returns to the condenser and is used again. A very low temperature may thus be produced and maintained. Dampness, instead of causing decay, becomes condensed on the pipes. The system is probably the nearest to perfection of any yet introduced.

The "*Chemical Composition of Fruit*," was the topic of a suggestive paper by Professor Lazenby, of the

Ohio State University. In this paper it was shown that the art of horticulture consists in transforming, by means of cultivation, crude and worthless materials into substances mainly useful and wholesome fruit products. Progress in horticulture means an ever increasing insight into and a better understanding of the laws which govern the desired transformations. It means a better knowledge of how plants grow and how they feed.

The sciences of botany, chemistry, and geology have all contributed much toward this end. Of the three sciences named perhaps chemistry plays the most important part, being most intimately connected with and concerned in their changes in material substances which the horticulturist is constantly endeavoring to effect.

One of the lessons to be derived from chemistry is *the needs of the soil for profitable fruit production*.

It is well known that every plant, large or small, herbaceous or woody, is composed of certain elements, whereof by far the larger portion comes from the atmosphere, a much smaller, though constant and no less essential part coming from the soil. The elements which are absorbed from the atmosphere are usually found in abundance and are yielded freely to all growing plants. If the roots are duly supplied with mineral and nitrogenous substances, together with a sufficiency of moisture, the rapid and perfect development of leaves, the organs of atmospheric absorption will secure whatever can be obtained and is needed from the air.

The really important question, therefore, is this: "Are the necessary elements that are furnished by the soil usually present in such quantities and under such conditions that the wants of the plant are fully supplied?"

In answer to this it can be safely asserted that there is scarcely a single square rod of land within the borders of our country so rich in all the elements of available plant food that the production therefrom of fruit or vegetables could not be increased

bysome application of fertilizers. The intelligent, practical horticulturist can not fail to ask himself the following question: "Wherein is my soil originally deficient and upon what elements have the largest drafts been made by subsequent cropping?" Can chemistry help us to an answer? Let us consider. We may not have much to hope from the analysis of soils, and it is doubtful if this will ever do much more than furnish hints as to what may or may not be required. On the other hand we have much to hope from the analysis of plants and fruits. To illustrate: The stems, branches and leaves of different fruit trees contain comparatively large quantities of lime and potash, substances that are not infrequently lacking in our soils.

Chemistry also tells us that our fruits, especially those that bear large quantities of seed, contain a considerable amount of phosphoric acid. An average of several trustworthy analyses of the seeds of the grape give in every 100 parts of the ash, 29 parts of the ash, 29 parts of potash, 34 parts of lime and 24 parts of phosphoric acid.

From this it seems plain that the roots of our fruit-bearing plants must be duly supplied with these mineral ingredients. The three sub-

stances named above, together with nitrogen, which is taken up by the roots in the form of ammonia or nitrates, must be in some way furnished to all growing plants. The farmers', gardeners' and fruit culturists' partiality for barnyard manure in preference to most, if not all, commercial fertilizers, is because when well made and well preserved it is an almost complete plant food, a large portion of which is in an immediately available condition. Next to farmyard manure, according to the teachings of chemistry, unleached wood ashes is probably the best fertilizer for fruit gardens and orchards. Lime probably stands next, where the soil is deficient in this element, and phosphates or fine ground bone whenever the soil has become despoiled of phosphoric acid.

As a remedy for *grape rot*, Mr. Geo. M. High said that after careful experiments, he has concluded that the best remedy is the following: "Dissolve one pound of sulphate of copper (blue vitrol) in two or three gallons of hot water. When cold add one pint of spirits of ammonia. Pour off the clear liquid and add to what remains 20 to 25 gallons of water. Begin spraying about 10 days before blossoming time."

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## NEW FRUITS.

AT the last meeting of the New Jersey Horticultural Society, Dr. J. B. Ward, as a member of the special committee on trial of new fruits, mentions the following:

Golden Queen raspberry very prolific, a strong grower, of excellent flavor. Its wonderful suckering tendencies, and its color are against it. Not good for market. The Crystal raspberry is four or five days earlier and handsomer, and of bright yellow or straw color; perhaps it is not quite so prolific. Introduced by

Caywood. The Cohanzick strawberry is a complete failure. Fruit hard and very acid, and not to be recommended. The Minnewaski blackberry holds its own, and even improves on acquaintance. It ripens with the Wilson. Fruit larger, very sweet; vines very prolific and hardy even in exposed locations. No rust or double blossoms noted about it yet. Holds its color well. Mr. J. T. Lovett says the market rejects all but a bright red variety. Fashion in a measure controls the market.

The Golden Queen raspberry is only good for family use. On the subject of worthy fruits, new or old, Mr. W. R. Ward says that some of the old fruits, which are not yet much disseminated, are as good as new ones, and can often be grown with as much profit as any, new or old. Old varieties are often new to some people. The Kieffer has been growing in popularity. At the start too much was claimed for it. Growers now concede it to be a good cooking, and a good market fruit, and profitable. His Kieffers sold in market for \$1.40 per bushel, and Anjou for \$1.65. Yet the Kieffer, one year with another, produces double as much as the Anjou.

The loss in ripening is very small and the tree is not subject to much injury from insects. The fruit is valuable for New Jersey. Dana's Hovey is in many respects the opposite of the Kieffer—one of the oldest, yet very little grown. It is of highest flavor and deserving widest dissemination. The Quinn pear is also one of the very best—late and a very good keeper. The Lawson tree is a good grower, but he could not say anything in regard to its fruit. Many strawberries have recently been introduced, but few are receiving field culture. The Jessie is one of them, doing especially well on a heavy soil. Its popularity is on the increase.

Schaffer's Colossal raspberry is discarded on account of its color. Cuthbert and Marlboro take its place. The latter is considerably earlier than the Cuthbert, hence does not come in competition with it and is gaining in popularity. Fay's currant

is sustaining its reputation and the claims made for it by its introducer or originator. He has some bushes three years old, that yielded as much as twelve quarts each, and the fruit sold for 10 cents a quart. Of cherries the Montmorency and English Morello are good, and yet not generally grown. Moore's Early grape is one of the very best early black sorts in cultivation. It comes to the market when that is yet unsupplied with grapes; or at the same time with green Ives, Champions or Concords from Delaware and Maryland. Last season it sold in Newark for eight cents per pound, while Concords in their season brought only four cents. It takes the place of the Ives, and is much better and more acceptable.

Mr. Beebe praises Grimes's Golden apple, that has never been pushed half as much as it deserves. The Wagener also is hardly disseminated and yet it is one of the finest apples. He is disgusted with many of the Russian apples. The Canfield is a tough, sweet apple, perhaps good to cook or for cider. J. T. Lovett thinks the Russian apples should not be condemned in this fashion. Yellow Transparent is good. Being asked about the Delaware Winter apple, he says he is quite confident that it is identical with the Lawver; but even this is not much known. Mr. Wilcox says it is a good keeping apple, but never becomes good to eat. Quality always very poor. Grimes's Golden is praised by Mr. Lovett. We have condensed the most of the above notes from a report in our estimable contemporary, the *Rural New Yorker*.

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## THE BANANA.

**T**HIS fruit is now so common in our fruitstores, and so much used as a desert fruit, that a little information concerning its growth may be interesting to

our readers. Every one knows how refreshing the banana is to hungry railway passenger, how its flavor, at first too sweet and insipid to be relished,



soon begets a taste that enables one to highly appreciate it, and how nourishing an article of diet it is acknowledged to be ; but few of our Canadian growers of the apple, pear and peach know anything about growing bananas. The following particulars are from the Philadelphia *Press* :—



BANANA PLANT IN FRUIT.

The stem or trunk of a banana is about fifteen feet high, and of a pithy nature. It reminds me of an overgrown corn stalk, although the joints are not so plainly marked. The sheaths, indicating leaves which have fallen off, are faintly visible from the ground almost to the top. The stem is eight or ten inches in diameter at the base and diminishes very slowly toward the top.

The leaves, of which the number varies, do not spring from the trunk as do the limbs of trees, but encircle the stalk, forming a kind of sheath, which, as it grows, partakes less and less of the nature of a sheath, until, springing upward and outward, it forms a stem and leaves the stalk or trunk. The stem, itself, is of peculiar form, having, near

its base, a circular under-surface while through the upper surface runs a groove. This form extends some eight or ten inches, when the groove disappears and the stem presents a circular appearance.

The leaf is of a deep green color, regular in form and about ten feet long by two or three in width. Several of them spring in a bunch from near the top of the stalk and hang in graceful curves on all sides.

Directly from the top projects a sort of stem upon which the fruit grows and ripens. As the fruit matures this stem is inclined downward, sometimes hanging parallel with the trunk. This stem is from three to five feet long, and the fruit which it produces much resembles the paw-paw in shape and color. At the extreme end of the stem hangs a beautiful flower of purplish hue, the faint perfume of which we were denied by its inaccessibility.

Such is the appearance of the banana plant. There is no doubt that in its native home its foliage is much more luxuriant and its beauty much enhanced.

From conversations had with parties who have visited its native clime its cultivation is as follows : The plants are set out about ten feet apart. So rapidly do they grow that in eight months a crop is ready to gather. During this time suckers have been springing up from the base. All but two or three of these are destroyed. A second crop from the old stock is harvested when it is cut away to make room for the new ones, which contribute each their bunch of bananas about eight months later.

This process is kept up until the ground is exhausted, when a new planting in a different place is made and the process is repeated. The bananas, being gathered while yet green, are able to reach foreign markets in good condition. There they are ripened under different processes.

## From Our Exchanges.



### Tree and Man.

THE tree, like the human being, belongs to some especial race and family; it has skins and veins and blood; it has its antipathies and loves; its flowers and fruit correspond to his words and actions; it fills its appointed place and does

its work among its fellows. Some trees, like some men, diffuse about them beauty and gracious influences, while others fulfil hard and severe uses. They live, like men, in company or in gloomy solitude. Moreover, to every tree as to every man, comes at last the hour when it must disappear and give place to the vigorous young sapling which springs from its roots. A tree, to be healthy, requires both food and fresh air at the roots. When the ground is barren of nourishing juices, or is packed and clammy, the tree shrinks and grows poor and meagre.

The thoughts of a man are the roots of his life. If he does not draw strength and knowledge up with them, his life will grow lean and poor. Or, if his thoughts are confined to a too narrow circle, if they are not aired by reading, or travel, or contact with other minds, the same effect will be produced. The whole man will shrivel, and his fruit of good deeds will be scanty.

A tree, too, needs to be washed and kept clean by the rain from Heaven, in trunk and leaves, or it will not grow. The boy whose heart and mind are covered with the dust of the world—the puerile, worthless cares and gossips of every day—and never are washed

clean by contact with great thoughts of God's goodness and power, will dwindle into a petty, insignificant man. The leaves, too, need sunshine, just as the man needs cheerfulness and joy in his life. Neither tree nor boy will be healthy or sound at the root if the surrounding atmosphere is always dark and murky. No tree can have its place taken by another while it still lives. Neither can any man do another man's work or fill his place. Tom may be a giant in body and intellect, and Joe a dwarf, but Joe has his little word to speak and fruit to ripen, and no man can do it for him. But when the work is done by tree and man, and death comes to them, God certainly and quickly fills the place of both. A great oak sometimes falls in the forest, and we are amazed to see how shallow and small was the hold of its roots in the earth. It is taken away and the grass and young saplings in a few days hide the scar.

A great man falls and the nation is shaken to its centre. But other men take up his work and fill his place. The hardest lesson for a man to learn is that while no man can do his work for God while he is here, it will go on without him when he is gone. Humility, says St. Basil, is chief of all virtues, for it is the one which only death teaches us.—*Youth's Companion*.

THE women of California are finding profitable and steady employment in fruit culture. Picking, packing, making raisins and canning fruit as well as crystallizing figs and apricots are largely done by women. Not a few of them are owners of fruit farms, which they carry on.



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 Dominion Farmer's Council and the Fruit Growers' Association.

A COMMITTEE from this Farmer's Club, which meets monthly at London, Ont., recently visited the Ontario Agricultural College at Guelph. Mr. Deadman, the member of the Committee who reported on the Horticultural department of the College, stated at a recent meeting of the club, that this department was a "total failure." The chief cause of failure he attributes to portion of the farm chosen for the orchard, and fruit gardens; it being the lowest on the farm, very wet in spring and fall, and subject at times to great overflow of water. Neither was it properly drained before planting, only a two-foot drain being used, and this now out of working order. He further says, "We do not blame the present authorities for this, as Mr. Forsyth informed us that it was chosen by a deputation of the Fruit Growers' Association, Mr. Saunders and Mr. Beadle being members of the commit-

tee." Prof. Robertson, being present, said that "in justice to the Fruit Growers' Association he was forced to say that the selection of the site for the orchard was made by that body in winter, when there was fully two feet of snow, and that, at that time, the ground presented a much higher appearance than it really had."

Now, there is no doubt that the Committee's report is correct in regard to the unfortunate location of the orchard and fruit garden; if it was a serious blunder to locate it so unfavorably, it is also a serious blunder to lay upon the Fruit Growers' Association the blame of that location, much more that for neglect of proper drainage.

The following letter from Mr. Wm. Saunders, Director Experimental Farm, Ottawa, a member of the committee from our Association, places the affair in its true light; and will, we hope, prevent a repetition of unjust censure in this matter in the future.

"In some strictures made in a report to the Dominion Farmers' Council, on the Fruit Department of the Agricul-

tural College at Guelph, in *The Farmers' Advocate*, the statement is made, that the ground selected for the fruit trees, which had proved such a failure, was the choice of a deputation of the Fruit Growers' Association, including Mr. D. W. Beadle and myself. In justice to that deputation, I would say that this field was not our choice, that we endeavored to induce the Professor of Agriculture to place at our disposal some higher and drier ground, without avail. The more suitable fields were all under experimental crops, which could not be interfered with, and this was the only one to be had at that time for the purpose. It looked better than it really was, the ground being covered with snow at the time; further, we were assured that it could be easily drained and that it would be thoroughly drained the following spring: with this understanding we consented to the use of that piece of land for the purpose. Frequent representations were subsequently made by us as to the necessity of draining this field and the certainty of the failure of the trees if it was not drained, but I believe no attempt was ever made to carry out the promises given to the deputation in this particular. Had this been done I believe the orchard would have proved a success. I see no reason why the hardier varieties of apples should not succeed on the College Farm at Guelph, if high or well drained land were selected for the purpose."

#### Hardy Peaches.

Mr. E. A. RIEHL, Alton, Ills., says he lives on the very northern limit of the peach belt, where such tender varieties as Crawford, Wheatland, Christiana, Reeves, and others are too uncertain to plant with any prospect of yielding paying crops. He has been experimenting with several varieties of the Chinese strain, and likes them very much for market purposes. He found the Chinese Cling, Gen. Lee, Thuber

and Family Favorite hardy in bud and blossom, very large and good keepers and shippers, hence profitable. In quality, however, they are but second rate.

He says that Amelia is the best early peach he ever grew, ripening before Early York, a very large and productive peach. He always speaks highly of Wilkins, Great Western, and Shipley's Late Red.

#### Success in Treating Brown Rot.

MR. F. L. SCRIBNER says in *Orchard and Garden*, that we need no longer dread the Brown Rot, a result of the presence of Downy Mildew, because it may be prevented by the use of Sulphate of Copper Compounds. He gives the experience of Mr. Geo. High of Middle Bass, Ohio, in treating this disease with *eau celeste*, as follows:—

Mr. High used *eau celeste* treating a number of varieties, chiefly Catawbas. The apparatus used was a Nixon barrel force pump and sprayer, with a No. 4 nozzle of the same maker. First application was made June 7, about 10 days before bloom. One half the vineyard, the east side embracing about 2,000 vines, was again sprayed June 18. The blossoms were just falling off at this time. To the same part applications were repeated July 6, July 18 and August 7. This lot of vines showed hardly any signs of mildew or rot up to August 16 (date of report). Some 2,000 vines adjoining which were left untreated had lost, up to same date, from one-fourth to one-third of their berries by rot, and their foliage was much injured by the mildew.

The 2,000 vines on the west side, treated with the east lot June 7, were treated again June 25, July 14 and Aug. 7. This lot rotted slightly but not to an extent exceeding 2 per cent. of the crop.

The season throughout was warm and moist. At no time has the ground

been dry; all the conditions were particularly favorable for the development of mildew and rot. The applications of *eau celeste* saved both fruit and foliage in an almost perfect condition. Mr. High says in so many words that he does not believe there is a vineyard of Catawbas on North Bass or Put-in-Bay Islands which has not lost by rot and mildew from 1-4 to 1-3 or more of its crop, while on his *eau celeste* treated vines the loss will not amount to one per cent.

Cost of material per acre for each application, was 30 cents :

2 lbs. sulphate of copper	} Amount used per. ac; vines planted 6 x 7 ft.
1 qt. of liquid ammonia	
56 gallons of water	

The Barrel pump and sprayer cost \$35—exclusive of freight. No price given for labor; but with the apparatus used two men and a horse were required, the spray being applied just as fast as the horse could walk through the rows.

Mr. High concludes his report by saying that "had we applied the *eau celeste* to our entire vineyard, it would have been hundreds of dollars in our pockets."

#### The American Pomological Society.

THE twenty second Biennial Session of this important Society will be held at Ocala, Florida, February 20:h, 21st and 22nd, 1889. We very much regret that the change of date causes that meeting and our Winter Meeting to occur at the same time, because our Association ought to have some delegates at the meeting in Florida. The Executive Committee have tried faithfully to arrange our meeting for an earlier or a later date, but difficulties presented themselves on all sides, so that it was found impossible to make any change—a great disappointment to the writer, as well as other members of our society who had counted much upon the trip to Florida.

The following is a copy of the preliminary circular :—

At the last meeting in Boston, the Society unanimously accepted an invitation from the Florida Horticultural Society to hold its next meeting in that State. This will be the first time that a meeting has been held in the extreme South. The enthusiasm with which the proposition to go to Florida was received, and the extensive preparations being made by the Pomologists of the South for the reception of their Northern friends, give promise of the most successful meeting ever held.

The session will open at 10 o'clock, on Wednesday, February 20th, and continue three days. It was expected to hold the meeting at Sanford, beginning February 6th, but it has been found necessary, owing to lack of time for suitable preparation, to postpone it until the 20th, and at the request of the Florida Society, to hold the session at Ocala instead of Sanford. Ocala is located in the central part of the Peninsula, in the midst of the Orange Region, nine-tenths of all the oranges grown in the State being produced within a radius of eighty miles. The climate is salubrious and healthful. No cases of yellow fever have occurred in that region, and the direct railroads leading to Ocala from the North pass through none of the districts where it has existed. No fear, however, need be entertained of visiting any portion of the State on this account. Since the occurrence of severe frosts the last quarantine, that of Jacksonville, has been raised, and the tide of winter travel has now set in.

Among the attractions offered by the people of Ocala, as inducements to hold our meeting there, are the Florida International and Sub-Tropical Exposition, which opens in January, the commodious buildings of which are tendered for the use of the Society. The leading places of interest in the State are easily accessible from this point, and the local attractions include the famous groves of Lake Weir and Dunnellton, and the wonderful Silver

Springs, the finest of the kind in the world.

Arrangements will be made for unusually low rates on roads entering Florida, and for excursions within the State. Full particulars in regard to these will be announced later. Where no other arrangements exist, delegations should secure special rates to Ocala from their nearest member of the General Passenger Agents' Association.

It is hoped that all Pomological, Horticultural and Agricultural Societies in the United States and British Provinces will send delegates, in such numbers as they may deem expedient, and all persons interested in the cultivation of fruits are invited to be present and become members of the Society. Persons so desirous can remit the fee, four dollars for biennial membership, or twenty dollars for life membership, to the Treasurer of the Society, Mr. Benjamin G. Smith, Cambridge, Mass., who will give a receipt for the same, entitling the holder to all the courtesies in the way of reduced railroad and hotel rates, etc., which are accorded to members. It is desirable that the Secretary be notified as soon as practicable of the number of members expecting to attend, in order that proper arrangements may be made for their reception.

A special invitation is extended to ladies to attend the meeting, become members, and take part in the proceedings. An attractive programme is in preparation, a full account of which will appear later. It includes papers and discussions by the best Pomologists of the country upon new fruits and methods of cultivation, and problems of judging fruits, of transportation and marketing, diseases and their remedies, and the origination and introduction of new varieties.

The Society offers no premiums for exhibits of fruits. Several special prizes, however, are offered by the Florida Horticultural Society for exhibits to be made at the meeting, the awards to be made by a committee appointed from the American Society. The usual awards of Wilder medals

will be made for objects of special merit.

A. A. CROZIER, *Secretary*,  
AMES, IOWA.

PROSPER J. BERCKMANS, *President*,  
AUGUSTA, GA.

NOTE—Until the Florida meeting, the address of the Secretary will be at the Department of Agriculture, Washington, D. C.

#### Horticultural Exhibitions.

MR. M. H. BATTLES, of Philadelphia, writes in the *Garden and Forest* upon the above subject, and makes some very sensible suggestions, for their improved conduct and increased usefulness. In brief, his ideas are to have the hall beautifully decorated with greenery, the tables covered with moss, and draped in front with cloth, with eyelet holes for hanging, which could be used for a number of years. Grapes are to be hung up, and the "bloom" to be made a strong point in judging; and as for vegetables, that only remarkable specimens be admitted. The local papers are to be well treated, and frequent notices secured. Two orchestras are to be engaged to give promenade concerts at fixed hours and music at frequent intervals. All parts are to be named with both botanical and common names. All exhibits to be judged by "points," and judges from a distance preferred. Premiums are to be liberal, but awarded with the greatest care.

Mr. S. T. Wright also has an article in the *Horticultural Times*, (Eng.), on this same subject, in which he advocates that fruit shows should be made a means of education to the public. He says:—

A gardener visiting a Fruit Show may learn a great deal of useful information by entering into conversation

with brother gardeners. He may learn what succeeds and what does not succeed on various soils; the system of growing, and many other items that will prove useful to him. But my object is to suggest an improvement in our Apple and Pear Shows, so as to make them a guide to the public as to what to grow on different soils, and also to inform them on what sort of trees the fruit was grown. I think it might be done by requiring all exhibitors to fill up cards to be provided by the Society in somewhat the following manner:—

Name.....	Pott's Seedling.
Season.....	September to November.
Fertility.....	Good.
Tree.....	Bush.
Soil.....	Strong loam.
Aspect.....	West.

By this means a Fruit Show would be very instructive, and of course it would be seen by the exhibit the size and ap-

pearance of the fruit, and the different items as to soil, aspect, tree, and fertility, would vary according to circumstances on the card. A very important point for committees to consider is the appointment of judges. No man should be selected unless he is a well known cultivator, of unblemished reputation; and no local man should be chosen. It is far more satisfactory to all concerned to have the judges perfect strangers to the locality. Personally, I should like to see fruit or other useful shows held in every district, as, when conducted in a straight and honorable manner they do an immense amount of good. They encourage a friendly rivalry in the production of fruit, plants, or flowers, which must be to the benefit of gardeners' employes, by the improved quantity and quality of the produce grown in the gardens.

## QUESTION DRAWER

### Stock for Dwarf Pears.

6. WILL seedlings of the Orange quince do to bud pears on so as to make dwarfs, or must I use the Angers? Please give reason for preferring the latter.

Is the Doyenne Boussock sent out by the F. G. A. a dwarf or standard, and will it do as a dwarf?—E. ROBINSON, Glendale, Ont.

The Angers quince is usually preferred by nurserymen as stock for dwarfing the pear, probably because it is cheaper and more hardy than other varieties. We have, however, had success in using the Orange quince stock, and can see no difficulty in the way of its use for budding with the pear. If any reader of this journal has any other experience to offer we will gladly publish it.

The Doyenne Boussock is best grown as a standard. It may, however, be dwarfed by budding on the quince.

### Stock for Russian Cherries.

7. I HAVE a great number of the common Canadian cherry seedlings. Can I use them to bud the Russian cherries on? Will it alter their dwarf habit of growth? If not suitable please state best stock for the purpose. At about what age do the Russians bear fruit?—E. ROBINSON, Glendale, Ont.

We know of no reason why the Russian cherries should not succeed budded on our common Kentish seedlings. Indeed, it is probable that a large number of the Russian cherry trees sold by the nurserymen are so grown. It is best, however, for securing hardy trees to propagate them by sowing the seeds of Russian cherries, or else by budding upon stock so raised.

### Norway Spruce from Seed.

8. PLEASE give particulars of raising spruce trees from seed. I wish to raise some for a wind break.—E. ROBINSON, Glendale, Ont.

The raising of Norway spruce trees from seed is a difficult matter, and only experienced persons are likely to have any success. The seeds may germinate freely enough, but when about an inch high, about forming its second leaves, the life of the young plant may be blasted by a breath of unfavorable air, hot sunshine, or an atmosphere either too dry or too humid. The usual practice is to sow the seeds in a well-prepared seed bed which may be shaded when necessary either with evergreen boughs, or with an awning of thin cloth. The soil needs to be light and porous, and the seeds covered lightly and watered frequently. In warm wet weather the seeds will be liable to rot and the bed should be sprinkled with dry sand. Sow either in fall or spring.

Young trees may, however, be purchased from nurseries at so low a price, that we would advise our correspondent to buy them about a foot high. Great care must be taken in handling evergreen trees to keep the roots moist, for if they are exposed for even a short time to the drying effects of wind and sun, there is small chance of their living. The reason of this is that the sap of conifers is of a resinous nature, which drying renders insoluble.

#### Diseased Grape Wood.

9. FIND enclosed a small portion of diseased bark from one of my Salem vines. It first made its appearance last spring; I cut it off and thought nothing more of it, but last fall when I was collecting my grapes, I found that it had spread on the two branches of the vine to the extent of sixteen or eighteen inches. It peels off with the old bark and leaves the wood quite healthy. The vine is otherwise in good condition, and I would like to know what it is.—T. NEELAN, Port Hope.

*Reply by Prof. Fletcher, Ottawa.*

You wrote me a letter in May, enclosing one from Mr. T. Neelan, of Port Hope, enquiring about a diseased grape stem. As all my furniture and instruments were packed up and inaccessible, I sent this on to Prof. Farlow of Harvard University, for his opinion. Prof. Farlow, I may mention, is the highest authority we have in America upon microscopic fungi. His answer is as follows:

"The trouble is not due to a fungus. This peculiar kind of excrescence has in Germany generally been attributed to cold and severe weather in winter. How well that may apply to your case I do not know. The trouble, however, is climatic rather than fungous."

#### The Baker German Prune.

10. You would oblige me very much by giving me information about the Baker prune. I want to set out an orchard of prunes, and I see by your journal last summer that the Baker prune is highly spoken of. Please give me the name of the person I can buy them from.—GEO. HARRIS, Dungannon, Ont.

So far we believe this variety of the German prune is entirely local in the Collingwood district. Some of our enterprising nurserymen should propagate it and advertise in these columns, as we have numerous enquiries for it.

You might get some information about it by writing to L. Brillinger, Collingwood.

#### Apios Tuberosa.

11. I WISH for information on the proper treatment of the Apios Tuberosa. I cannot succeed with it. I have tried three times and always failed. I think my garden is too dry. What kind of soil suits it best, and how does it attach itself to its support? The climbers have so many different ways of laying hold of the prop, that the same thing will not do for all.—MRS. A. BOURN, Cobourg.



*Reply by Anton Simmers, Toronto.*

*Apios Tuberosa*, to succeed well, should be planted in very rich, damp soil near a trellis (as it is intended for covering trellises, arbors and fences); the soil should be well worked and of a loamy nature, not stiff clayey soil. Plant about three close together if you want a good thick covering. This climber does not cling to any trellis work; it requires fastening up like ivy, and will, if growing in good soil, out-grow the ivy easily; besides, its bloom is exquisite and fragrant. It is hardy, not requiring to be lifted during winter. Water it freely if the soil be dry, and success is certain.

#### **Palms.**

11. IN sowing palms should the seeds be put on their edges or flat?—A. J. COLLINS, Listowel.

*Reply by F. Mitchell, Innerkip.*

I have had but little experience in the matter. I know it does not signify in what position seeds of the date palm are placed. They germinate very readily if a sufficient degree of heat is maintained, and for a sufficiently lengthened period.

#### **Rose Cuttings.**

12. How would you increase rose bushes from cuttings, when they do not send up suckers?—A. J. COLLINS, Listowel.

*Reply by F. Mitchell, Innerkip.*

Wood from the top of the bush and that which is bearing bud or bloom makes the best cuttings. Cuttings should not be made from young suckers, as the wood is pithy and immature.

#### **Budding the Apricot.**

13. Can the apricot be grafted or budded on the plum?—WM. SWITZER, Kirkton, Ont.

Yes. You can use either the peach or the plum as stock for budding apricots upon. The peach seedlings are more easily grown, and more easily worked, but the plum stock is hardier, and hence should be used where the peach is tender.

#### **The Crandall Currant.**

14. Do you know anything about this new currant—the Crandall Currant. "This new and distinct sort is remarkable for its great size and productiveness. It attains the height of seven or eight feet, forming an enormous bush. Shoots frequently grow five or six feet in one season. The currants are borne in great profusion and are of the size of grapes, jet black in color, and very fine in flavor. Perfectly hardy and a rapid grower. \$1.00 each?" You will oblige by answering in the next HORTICULTURIST.—WILLIAM SWITZER, Kirkton, Ont.

We have never seen the fruit, or the bush; and would advise you not to invest much in it until it is better known.

## — OPEN LETTERS —

#### **Blushed Calville.**

SIR.—I notice in the January number the following note, by Mr. Charles Gibb:—"Blushed Calville has only borne with me two little specimens in nursery, and did not strike me."

I have spoken very favorably of this variety for western planting, for these reasons. (1) The tree is hardier and freer from blight than Yellow Transcendant or Charlottenthaler.

(2) It is an early and continued bearer of handsomely blushed fruit of about the season of the Transparent, that holds its flavor remarkably well when overripe.

After growing many bushels of the fruit at the college and at our trial stations I know of but one fault, which is uneven size of fruit when the trees overbear, ranging in size from that of Transparent to that of small specimens of the Longfield.—J. L. BUDD.

### Transportation.

SIR,—I am glad to see that our mutual friend Mr. Thom, of the "Beaver Line," has discovered that Montreal Shipping Companies handle our apples better than New York Companies. The information I get to date for this season certainly agrees with Mr. Thom. But this is only as regards this season and I am sure our shippers will be greatly pleased to know that our carrying companies have greatly benefited by the scourging administered last year. There is still some room for improvement and I trust our friends at Montreal, as well as our Canadian Railway Companies, will continue to improve and keep well ahead of the American Railways and the N. Y. Steamship Companies. The Canadian carrying companies certainly deserve the patronage of our shippers for their conduct this past season and if they continue their good behavior we will be inclined to turn all traffic via Montreal. But they must not fall back next season, for we have reason to believe that an attempt will be made next season to draw freights via N. Y. both by extra careful handling as well as lower rates.—A. McD. ALLAN, Goderich.

### Plants Tested in Renfrew County.

SIR,—I will try and report on plants, etc. I received from the Fruit Growers Association in 1884, a plant of the PRENTISS GRAPE. I think it is too tender for this part as it gets killed nearly to the ground every winter, with the same care and protection as the other vines. In 1885, I received a yearling plant of FAY'S PROLIFIC currant. It is living and doing well; it had a few bunches of fine large currants on this year. The next I received was a yearling vine of the EARLY VICTOR GRAPE; it is hardy and it is doing well. The next I received was the NIAGARA GRAPE-VINE; it stood the winter well and grew splendidly this summer; then I received a package of spring flowering bulbs; they all lived but none of them flowered.—A STEWART, Stewardville, Ont.

### From Quebec.

SIR,—For the benefit of those of us who live to the far north (for fruit raising) I would beg of you when describing fruit trees or plants, specially new ones, to particularly state if they are hardy, or very hardy, and also for grapes if they are early or very early.

If it was not so difficult now for me to write, especially in English, I would have sent you some notes on my small experience here in fruit culture, but I will try by and by.

Then if you send out the MOYER grape for trial, I would be thankful to get one and to cultivate it side by side with the Wyoming (very valuable here), and which it seems to

resemble much. Having been brought up as a worker in the largest vineyard on Geneva Lake, Switzerland, and having now twelve years' experience here with 19 varieties, I hope to be able to give it a fair trial.—L. PASCHE, Bryson, P.Q.

### Complimentary to Ontario.

SIR,—Please send me the HORTICULTURIST for 1889, as I have got settled down in my old home, after tasting the fruit from here to Mexico and the Pacific coast and on the prairies and even among the Mormons. I have failed entirely to find any place that can produce the kinds and quality that we have at home or that can preserve it in its natural state and flavor as we do. Of course, they have their oranges, but we can buy them as cheap here as there, and their wonderful grapes (to let them tell it), but we have just as fine fruit, as many varieties, of a better flavor, and we can keep them perfect for six months or longer, while they can't keep them at all except as raisins or dried. What they lack in most of their fruit is flavor; it is with a few exceptions, utterly flat. So send along the HORTICULTURIST, for we have got the finest country, the finest homes, the nicest people and the best and largest variety of fruit to be found on the continent, and as Canadians we are bound to keep and improve our goodly heritage.—FREEMAN COOPER, Picton Ont.

### Fruit Trees Tested in Russell County.

SIR,—The two RUSSIAN cherry trees I have do not grow very fast, and the one I had last year got killed back considerably. My two HAAS apple trees were almost totally killed with frost and cold, and BAXTER'S RED partly, GRIMES' GOLDEN altogether, and GIDEON either killed with cold or something worse. SCOTT'S WINTER, YELLOW TRANSPARENT, Wallbridge, Peach, MacIntosh, Red, Wealthy and Duchess of Oldenburg, are all right yet. Crops and hay very light here this year, potatoes good.—A. WALKER, Metcalfe, Ont.

### The Wire Field-Mice Protector.

SIR,—Seeing your notice of the wire field-mice protector, I give you my experience. A friend of mine had about ten trees lately nibbled and spoiled, when for three cents per tree they would have been safe. Since I put the protectors around my trees I have seen no trace of nibbles or any other injury; besides they keep away other insects. I have a woolen cloth fastened around my trees about two and a half feet from the ground, plastered over with Stockholm tar; well, every season the cocoons used to be quite thick underneath the ring of woolen rag and

tar, but since I put on the protector there are none. Had I known of the protector sooner I believe I could have saved some fine five-year-old peach trees, which I lost with the borer, for it attacks the tree near the surface of the ground. You say your custom is to bank up all the young trees throughout your orchards with fine earth, after clearing away all rubbish with a good sharp spade. What a cost that must be, and then in spring, I suppose you have to take it away again. Now, I save my trees at

three cents each, for the cost of putting the protectors on and off amounts to nothing. My plan is to put a lot of, say one dozen, together, rolled up, and then, opening them out a little, to draw out one at a time, and put it about the tree without tying; and this can be done in about a minute for each tree. I leave them on altogether, sliding it up a little, if I want it away from the surface of the ground. I would not be without mine for a great deal.—THOS. G. CASTON, Hamilton, Ont.

## Our Fruit Markets.

### Hull, England.

THE following lines from a letter from Messrs. John Seed & Sons, Hull, may be interesting, as showing the opening which exists for Canadian apples in many towns of England, not so favorably situated as Liverpool:—"Our port has hitherto had very little connection with Canada for apple trade but there is no reason why a good business should not be done here. Of course, we cannot take the large quantities as Liverpool, but our prices are usually a shade higher for everything and direct shippers receive the advantage. Last week, 15,000 barrels came in here. American and Canadian apples, rather depressed the market.

### Philadelphia.

SIR,—Below we hand you a summary of the present conditions of our good potato market with current quotations, and to which we invite your careful attention.

Comparatively, our market is in rather light supply. Arrivals are also light. These conditions give our market a favorable outlook, particularly for choice N. Y. White Stars, Burbanks and Hebron, and other northern and western grown choice table varieties. Maine, New Brunswick and other Can. Rose and Ohio Rose are also in scant supply and active demand, being wanted for seed purposes by our southern custom. If you have any choice stock to dispose of, it will be to your interest to consult us about the handling of it at once.

TABLE STOCK, we quote: Choice N. Y. White Stars, 40 cents per bushel, Hebron, 40 to 43 cents per bushel; Burbanks, 40 cents per bushel; strictly fancy, 2 to 3 cents per bushel more; rough stock and other varieties, 35 to 38 cents per bushel. SEED STOCK we quote: N. Y. Rose choice, 50 to 52 cents per bushel; Ohio and Pa. choice 52, to 55 cents per bushel; Maine, New Brunswick and Canada choice, 58 to 60 cents per bushel and \$1.75 to \$1.85 per barrel; Hebron, \$1.40

to \$150 per barrel and 50 to 53 cents per bushel.

Whenever we can serve you please to order.—PANCOAST & GRIFFITHS, Jan. 7th, '89.

### London, England.

SIR,—By cable to-day from W. N. White, fruit broker, Covent Garden Market, London, England, we are advised as follows: viz., Market strong, prices advanced, quotations now 11s. to 16s., considerable decrease in supplies, prices will go higher, immediate shipments would meet ready sale.—W. T. COSTIGAN & CO., Montreal.

### Liverpool.

SIR,—Arrivals since our last have been greatly reduced and prices show a slight improvement with better tendency. We quote: Baldwins 8s. to 10s. 3d., Greenings 9s. to 9s. 9d., Spies 6s. to 9s., Russets 9s. to 13s., Various 7s. 3d. to 13s. 6d., one parcel of extra fine Kings realized 22s. 6d. A percentage of last arrivals show signs of having been touched by frost. The market with a continuance of light shipments must improve. Awaiting your favors.—WM. THOMAS & CO.

### Fruit Imports.

MR. G. S. MORPHY, fruit grower, Grimsby, hands us the following letter from Mr. F. E. Galbraith, Toronto. It is evidently unfair to fruit growers, that, while the policy of protection is followed in the interests of manufacturers it should not also be in the interests of fruit growers. In the line of apples, however, more evil than good would result from an import duty, because our exports far exceed our imports. For instance in 1887, we only imported from the U. S. 36,000 bbls., while we exported to that country over 100,000. Mr. Galbraith writes:

SIR,—As you are, no doubt, already aware there is no protection to the thousands of

fruit growers in Canada, who are not able to compete with the growers of many kinds of fruit in consequence of our climate. For instance, the duty could be left off oranges, lemons, bananas, figs, dates, pineapples and any other Southern fruit and be placed on strawberries, raspberries, cherries, grapes, plums, etc. The prices of fruit would not be altered to the consumer, as he would only be asked to wait for a couple of weeks until our fruit would come into the market, and those who are anxious to have fruit before the season opens can afford to pay the duty. The same trouble is injuring the market gardeners, who are unable to get their early vegetables into market before the market is glutted with American products. In and around this city alone there are hundreds of hard-working market gardeners and fruit growers, who, in consequence of the duty being removed, are hardly able to make ends meet, and when you take into consideration the Niagara district, surely something can be done by the Government to remedy the injustice of not protecting these people as well as others.

Mr. B. Gott, of Arkona, a well-known horticulturist, writes in the same line; he says:—

We have had one year of no duty on fruit. As far as our experience goes it has not been at all profitable or encouraging to us. The movement may be very good on the line of Reciprocity or friendliness to neighbors, but in actual business where we have to buy as well as sell it puts us too much to a disadvantage, or makes us a slaughter market for almost all kinds of fruits long before ours can be got ready for the market, and in some cases long after. This, of course, may be, and is, great sport and a fine thing for the wealthy capitalist and the men who buy, but it is death to the poor, laborious fruitgrower, who should most certainly be the proper object of pity and protection.

In the language of a friend writing me a few days ago on this subject, he says, — "Just now the fruitgrowers are discriminated against. This is manifestly wrong. It is all crow for us and all turkey for the rest of the world. General Commercial Union that would cheapen our supplies might answer better. In early strawberries, apples, cherries, peaches and grapes, our friends in Western New York compete with us to our disadvantage, etc."

It is, therefore, a direct thrust at one of our prominent industries, at the productions of our fruitful soils, and at the revenues derived from the cultivation of these soils.

### The Canadian Apple Trade in Britain.

We are in receipt of some valuable correspondence from a correspondent in Walthamstow, England, Mr. Henry Fowler, who writes concerning the enlargement of our apple trade with Britain. He is of the opinion that if some concerted action were entered upon

by our Association, and a special agent employed in England, it would result in great advantage to Canadian fruit growers. Mr. Fowler, however, quite misunderstands the statements on p. 263 of vol. xi., that the total shipments from all Atlantic ports were only 114,599 pounds, supposing that was for this whole season, and blames us for an underestimate. If he will observe that selection was dated October 5th, and simply included the quantity to that date, when our crop was only beginning to move forward.

The following were the shipments from Atlantic ports for the week ending December 22nd, 1888, and for the season:

PORTS.	Montreal.	New York.	Boston.	Portland.
Liverpool.....		1,382	3,954	13,372
London.....		400	580	.....
Glasgow.....		247	3,963	.....
Various.....		350	.....	.....
Week.....		2,379	8,497	.....
Previously.....		331,280	290,398	.....
Season.....	291,692	333,659	299,895	.....
Last Year	93,134	214,106	83,912	.....

TOTAL SHIPMENTS TO	Week	Previously.	Season.	Last Year.
Liverpool	18,708	538,510	557,218	236,867
London ..	980	186,555	187,535	69,137
Glasgow...	4,210	224,517	228,727	111,013
Various ..	350	48,369	48,719	18,275
Total...	24,248	997,951	1,023,399	435,292

Our readers will be interested in some selections from Mr. Fowler's letters. Concerning the agent, he says:

"It appears to me that the circumstances of Canada in its fruit growing interests afford at present an excellent opening for a clever, intelligent and active young man to establish himself in London (and he should be a Canadian) as a Canadian agent for the sale of Fruit and Provisions, this last word to signify cheese, butter, lard, ham, bacon, etc.

"Such a man as I have referred to, backed and supported by the Fruit Growers' Association, would at once take a position that would command a large portion of the trade in the other commodities which I have summed up as provisions. His business would, of course, have to be a wholesale one, but he would not be debarred from selling a single barrel of apples to a consumer. All that is necessary to keep such transactions on a proper footing would be an honorable understanding with the trade that his prices in such cases would be such that dealers would have an abatement of ten to fifteen per cent., so that they could sell single barrels

at the same rate. Such an agency as this would soon become well worth the while of the agent, and serve the interests of Canadian shippers by getting the trade into a regular shape, keep down competition, and tend to steady the market prices. He would have to adopt a system of inexpensive advertising so as to ensure it being well known throughout the Kingdom as the legitimate channel through which the commodities he deals in, especially apples, could always be obtained.

"With such an agent in London, well established and doing his work satisfactorily to his principals, it might become expedient

to give him the command of the whole British market for Canadian apples, by letting him have his sub-agent at each of the ports of receipt—say, Liverpool, Bristol, Glasgow, and, perhaps, Hull. This would enable him to direct shipments from Canada to all these ports, in the proportions best suited to the demand of the neighborhoods which they could conveniently supply, and so save expense of unnecessary inland carriage. These suggestions may serve as a sort of foundation on which the fruit growers may themselves erect such a structure as may seem to them most desirable."

## OUR BOOK TABLE.

ANNUAL Report of the Bureau of Industries of the Province of Ontario, 1887. This useful volume is prepared by Mr. A. Blue, Toronto, and includes statistics of the weather and the crops, live stock and dairy, rents and farm wages, etc. Fruit growers would be much pleased if fuller statistics were given concerning the acreage devoted respectively to the various fruits, as apples, pears, peaches, grapes, etc.

JOHN A. BRUCE & Co.'s Thirty-eighth Annual Catalogue of Seeds, 1889, Hamilton, Ont.

SMITH & KERMAN'S annual catalogue of fruit and ornamental trees, grape vines and small fruits, grown at the Dominion Nurseries, St. Catharines, Ont., 1889.

J. A. WISMER'S descriptive catalogue of northern grown trees, grape vines, small fruit plants, etc., Port Elgin, Ont.

VICK'S Floral Guide, 1889, published by James Vick, Rochester, N.Y. This catalogue is got up in a new and attractive style.

WM. RENNIE'S Seed Catalogue for 1889, issued by Wm. Rennie, Toronto, Ont.

F. W. WILSON'S illustrated catalogue of Fruit and Ornamental Trees, grown and for sale at Wilson's Nurseries, Chatham, Ont.

JOHN LEWIS CHILD'S catalogue of new, rare and beautiful Flowers, 1889, Floral Park, Queen's Co., New York.

THE Sorghum Hand Book, published by the Blymyer Iron Works Co., Cincinnati, Ohio.

NIGHT and Day, a record of Christian Philanthropy, edited by T. J. Barnardo, 18 Stepney Causeway, London, Eng.

HIGH Class Fertilizers, manufactured by the Standard Fertilizer and Chemical Co. Works at Smith's Falls. R. J. Brodie, Manager.

FIRST Report of the Directors of the State Forestry Commission of Michigan for the Years 1887 and 1888. This is a most attractively got up volume, well illustrated, and carefully indexed, dealing with succession of forests in Michigan, large trees, new uses for certain kinds of timber, forest fires, cutting and removing logs for lumber, etc., etc.

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## PROGRAMME OF WINTER MEETING.

THE combined annual and winter meeting of the Fruit Growers' Association of Ontario will be held at the Court House, in the City of Hamilton, beginning on Tuesday evening, the 19th, and continuing during the 20th and 21st of February, 1889.

A show of choice samples of fruits from each agricultural division is desirable for comparison. New fruits, improved horticultural implements or machinery, plants, flowers, etc., on exhibition, will receive due notice in the report of the Fruit Committee. If sent by express they may be addressed to the care of the Secretary, at Hamilton.

Certificates for reduced railway fares will be mailed to anyone applying for them to the Secretary, at Grimsby.

Questions intended for the *Question Drawer* may be sent in advance to the Secretary, at Grimsby, or handed in at the meeting.

The St. Nicholas Hotel, Hamilton, will furnish accommodation to members of The Fruit Growers' Association of Ontario, at \$1.50 per day for single rooms, and \$1.25 for double rooms, during the sessions of the Association.

The following is an outline of the programme, with some questions for discussion added to each subject, from which, however, it may be necessary to deviate in some details :

## PROGRAMME.

Tuesday, 8 p.m., Welcome address by the Mayor—reply by President ; the President's annual address ; reports ; election of officers.

Wednesday, 10 a.m., VARIETIES OF APPLES THAT MAY BE PROFITABLY

GROWN IN THE CENTRAL PORTION OF ONTARIO : *Thos. Beall, Lindsay, Ont.* Discussion of subject. QUESTIONS :—What varieties of apples are most subject to black heart? How can it be prevented?

HORTICULTURAL SPECIALTIES FOR FARMERS: the *Secretary*. Discussion of subject. QUESTIONS :—Is apple growing profitable? Does it pay to export our apples? What are the drawbacks of exportation? TRANSPORTATION OF FRUITS TO HOME AND FOREIGN MARKETS :—What complaints have we to make against the railway express and steamboat companies?

Paper by *D. W. Beadle*, subject, "RUSSIAN APPLES."

MARKETING FRUITS : Is it not time for the F. G. A. of Ontario to take up the question of marketing our fruits? Would it be wise to have a fruit inspector appointed ; or what means could be adopted to induce growers to put up good, straight, honest packages of fruit? Could not the members of this Association act unitedly in marketing fruit through its own agents, instead of dealing with commission men, who often make more than the growers?

2.30 p.m., QUESTION DRAWER.

Paper by *S. P. Morse, Milton*

HOW BEST TO SECURE UNIFORMITY AND FAIRNESS IN THE AWARDS OF PRIZES TO FRUITS AT FAIRS : *Thomas Beall, Lindsay*. Discussion of subject. QUESTIONS :—Is it best to advocate the one judge system in the horticultural department at our Fairs? Should a scale of points be given by the judge in fruits, as is done in the poultry department? What is the best manner

of labeling varieties of fruits for benefit of the public?

FORESTRY: Address by *R. W. Phipps*, Commissioner of Forestry, Toronto.

Paper on Forestry by *I. C. Chapais*, *St. Denis, P. Q.*, author of "The Canadian Foresters' Guide." Discussion of subject. QUESTIONS:—What distance apart should walnuts be planted? How many per acre? What is the present value of walnut lumber? Is it true that forests influence rainfall? Is the Ontario Government likely to take any step to preserve our forests in the districts at the head waters of the Muskoka and Ottawa rivers? What kinds of forest trees are most profitable to grow on waste places?

8 p.m., QUESTION DRAWER.

CHRYSANTHEMUM GROWING: *Messrs. Webster Brothers, Hamilton*. Discussion of subject. QUESTIONS:—In growing such plants as Geraniums, Fuchsias, Cinerarias, Primula., Begonias, Callas, Oxalis, Tulips, Hyacinths, Heliotropes, Coleuses, etc., in house, or in small greenhouse attached to dwellings, what temperature is required, and how much water? Should plants exhibited at fairs be given prizes when shown without labels of variety, both common and technical?

WHAT CAN BE DONE WITH A CITY GARDEN OF, SAY, 20 FEET SQUARE IN PRODUCING SUPPLIES FOR A FAMILY: *Dr. W. C. Adams, Toronto*. Discussion of subject. QUESTIONS:—What is the best way to destroy the cabbage worm (*Pieris rapæ*)? What varieties of tomatoes are least subject to rot?

Addresses by the *Hon. C. Drury*, Minister of Agriculture, *Rev. R. Burnet*,

of *Milton, Mr. A. Alexander, F.S.Sc., Hamilton*.

Thursday, 10 a.m. Paper by *A. M. Smith, St. Catharines*. Discussion.

MY EXPERIENCE IN A FRUIT GARDEN FOR HOME USE: *T. H. Race*, editor *Mitchell Recorder*. Discussion of subject. QUESTIONS:—What varieties of strawberries, currants, raspberries, blackberries, should be planted for home use?

FERTILIZATION OF PLANTS: *Prof. Panton*. Discussion.

BIRDS USEFUL AND INJURIOUS IN HORTICULTURE: *T. McLaurath*. QUESTIONS:—Should a law be enacted favoring the extermination of the house sparrow? Should any steps be taken to discourage the slaughter of birds for ornament?

Thursday, 2.30 p.m. GRAPES: VARIETIES TO GROW, SHIPPING, DISTRIBUTING, MARKETING, ETC., by *E. D. Smith, Winona*. Discussion of subject. QUESTIONS: What is the best method of preserving grapes for winter use? What varieties are best for keeping? Should grapes that are grown to an abnormal size by ringing, compete at our fairs with those grown in the ordinary way? In judging fruits at our fairs, should size or quality have the highest value?

PLUMS: VARIETIES FOR HOME USE AND MARKET; INFLUENCE OF THE SCION ON THE GROWTH AND LONGEVITY OF THE TREE, ETC., ETC.: *Geo. Cline, Winona*, Discussion of Subject. THE RELATION OF THE FRUIT GROWERS' ASSOCIATION TO FARMERS' INSTITUTES. QUESTIONS:—Is it wise to advise farmers to engage in fruit culture?