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The CANADIAN HORTICULTURIST.

PUBLISHED BY THE
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ASSOCIATION
of ONTARIO.



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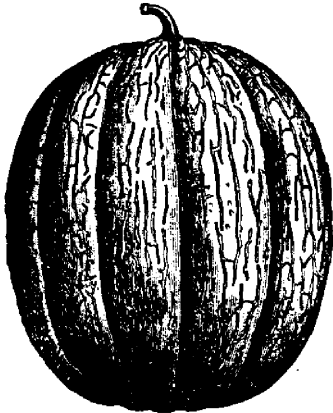
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THE CHOICE NEW EARLY
WHITE GRAPE.
"MOORE'S DIAMOND"

From seed of Concord, fertilized with Iona, by JACOB MOORE, Esq., of Brighton, N. Y. (the well-known originator of the "Brighton" Grape and other new fruits), who considers this the most valuable variety he has ever produced. In vigor of growth, color and texture, foliage and hardness of vine, it partakes of the nature of its parent, Concord; while in quality the fruit is equal to many of the best tender sorts, and ripens from two to four weeks earlier than Concord.



The
Canadian
Horticulturist.

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VOL. X.]

MAY, 1887.

[No. 5.]

Fruits.

LEADING VARIETIES OF WHITE GRAPES.

It is with pleasure that we chronicle any successful effort towards the improvement of those classes of grapes which can be grown in Canada; for if we can succeed in producing a grape of sufficient excellence in quality, we shall find an unlimited foreign market. The English people have a strong prejudice against the foxy flavor of the *Labrusca* family to which our leading grapes belong, and if we can succeed in obtaining a productive variety from which this is more or less eliminated, we shall find grape culture suddenly advancing toward the front rank among our most profitable industries.

Only a few years ago, and the *Rebecca* was about the only white grape of any importance. It is a delicious grape and still deserves a place in the

amateur's garden, but it is not popular for market culture.

The *Niagara* has distanced all its competitors in general popularity. The vine is a strong grower and very productive, the fruit is large and showy, all qualities most desired in a market grape: but, nevertheless connoisseurs would pay a higher price for a grape lacking its foxiness, should we ever be favored with one anywhere nearly its equal in other respects.

The *Pocklington* is a little hardier than the *Niagara*, a shade better in quality, and, when well ripened, is as attractive in appearance; but it is later, and consequently fails to ripen in Canada except in the most favored sections.

The *Lady* is a very nice early white grape, the vine is hardy and vigorous, and is worthy of limited cultivation in Canada. It is especially desirable for the home garden. This should not be

confounded with the Lady Washington, a noble grape where it succeeds, but not early enough to ripen well in this climate.

Of the

NEWER WHITE GRAPES

The *Empire State* has already attained considerable prominence. It is a cross between the Hartford and the Clinton, and ripens about with the former. The berries are a little smaller than those of the Niagara, but pleasanter to the taste being less foxy, just as juicy, and of a rich, sweet and sprightly flavor.

Jessica is a Canadian seedling, and is highly commended. It is claimed to be excellent in quality, hardy, and as early as the Champion.

And now we have before us a new claimant for popular favor, and one which boldly aspires to a leading place among our best white grapes viz:—

Moore's Diamond, which is represented in the colored plate. It is one of a lot of 2500 seedlings raised by Jacob Moore, of Brighton, N. Y., and is a cross between the Concord and the Iona. Its introducers speak of it as follows:

"It is a prolific bearer, producing large, handsome, compact bunches, slightly shouldered. The color is a delicate greenish white, with a rich yellow tinge when fully ripe; skin smooth and entirely free from the brown specks or dots which characterize many of the new white varieties; very few seeds, juicy and almost entirely free from pulp, which makes it almost transparent when held up to the light. Berry about the size of the Concord, and adheres firmly to the stem.

In quality, no other white grape in the market can compare with it. It is as much superior to the other leading white grapes as the Brighton is superior to Concord. In fact we believe that

nurserymen and fruit growers will find in this grape what they have been so long looking for, a hardy early and prolific white grape of fine quality."

All this however must be taken *cum grano salis*, until we have ourselves tested it in Canada, and are in a position either to deny or confirm it. Should it prove of excellent quality, and two or three weeks earlier than the Concord, and hardy withal, we shall certainly welcome it into our Canadian Vineyards.

TOP-GRAFTING OLD TREES.

MR. JOHN CROIL, of Aultsville, writes us the following letter on this subject:

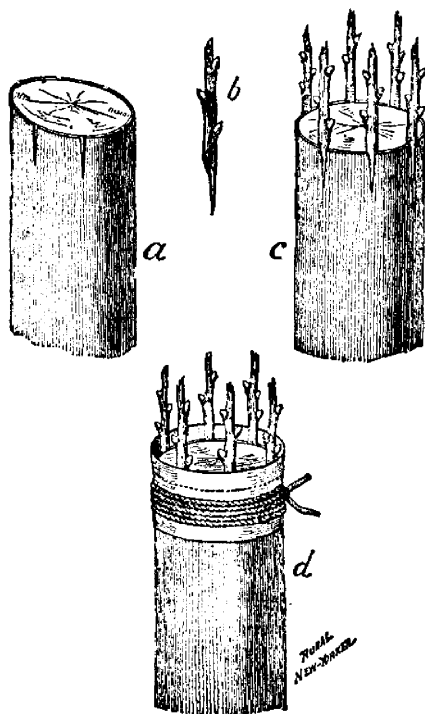
"SIR:—I enclose an article from the pen of Mr. James Dougall, which appeared in the *Montreal Witness* some years ago. While I agree on the main with some opinions expressed in the January number of the *Horticulturist*, that the Snow Apple and other pestilence breeding kinds should be cut down and burned, when there is a large proportion of such trees in an orchard, Mr. Dougall's plan, I think, might restore the trees to healthy productiveness without disfiguring the orchard. He claims for it the advantage that it removes the risk of moisture getting in at the cleft, when the grafting wax comes off, which it generally does, causing often decay, and the death if not of the tree, at least of the grafted branch."

The article referred to advises the following plan:—

"Very late in winter or very early in spring before vegetation has commenced in the least, saw off the main branches of the tree all over so as to form a symmetrical head, cutting clean out all small or badly placed branches. A very fine pruning saw should be used and the cut should be made slanting so as to throw the water off. The wounds could be painted over with gum

shellac dissolved in alcohol or white paint, but if a fine saw is used it will not require painting. Shoots will spring up in abundance from the stub of the branch left, which should be about fifteen or eighteen inches long, and these may be budded at the proper season.

This is a good plan, and quite practicable by any one who understands the simple art of budding; but a still better method of renewing old trees has been suggested by the *Rural New Yorker* and by favour of the Editor we are enabled to give our readers the following description of it with an excellent illustration.



CROWN GRAFTING.

"The following is an easy and effective method of grafting old trees. By it the percentage of failure is reduced to a minimum, and branches at least six inches in diameter, and, in the case of

pear trees 75 years old, may be worked with assured success. Last year we mentioned the case of such a pear having been grafted two years before with the Kieffer, that gave a full crop last fall. Saw off the branch at right angles to the stem to be grafted, as at Fig. 162 a. Then cut a clean slit in the bark through to the wood, as shown—a slit the same as in budding. Separate the bark from the wood and insert the cion b, one for each slit. The number of slits for each stock will be determined by its size. We will suppose the stock illustrated to be six inches in diameter, and that six cions are to be inserted. The stock after receiving the six cions is shown at c. Grafting wax is not needed. A thick paper may be wound about the top of the stock extending about one inch above it and securely tied with strong twine, as shown at d. The space above the stock encircled by the inch of paper may then be filled to the top of the paper with a puddle of soil and water, made so thin that it can be readily poured from any suitable vessel. This mud protects the surface of the wood of the stock, and excludes the air from the insertions. It gives every advantage of wax without its objections. Of course, stocks of any size may be worked in this way. One, two, or any number of cions may be inserted according to the size of the stock."

EXPERIENCE WITH GRAPES.

W. M. ROBSON, LINDSAY.

SIR,—I was much pleased with *Mr. J. H. Wismer's* description of the *Chinese Paony* in February Number. It was short, captivating, and convincing. Its special merits seem great enough to create a desire to become a possessor of this beautiful perennial. But I was sorry to hear the unfavorable report of the *Prentiss Grape* received from the Association; for with me in Lindsay, among my different kinds, which number in the teens, it has been my special

pride and pleasure to show friends and visitors this grape. About four years ago I planted this and a few others, then new kinds, including Lady Washington, Duchess, Jefferson, Brighton, Moore's Early, and Iona. They have all grown luxuriantly and fruited very well the last two seasons. But of white grapes the Prentiss has been my favorite—the bunches are so attractive, uniform and compact. The quality, I think, may be classed among the best, and just early enough to ripen its fruit here. In my opinion the famed Niagara has in this no mean competitor for first place among white grapes. Right alongside of this vine I have a rampant growing vine with heavy foliage and beautiful name, Lady Washington. Visitors are surprised; we are all surprised at the large double shouldered bunches. They look magnificent, if they would only ripen; but they have not for the past two seasons, and I am afraid they will not be a success in Lindsay. One more notice, only a black grape, and last but not least, in berry or reputation. I refer to Moore's Early. I think it one of the best black grapes for our section, being early, large, and good in quality, which are very desirable points; and I venture to predict extensive planting of this vine in localities where early ripening is a necessity.

The preceding is one more addition to the diversified experience of grape growing, I hope tending to give zest to the work, and a stimulus for emulation in this our labour of love.

FERTILIZERS.

NITRATE OF SODA. — *Orchard and Garden* says:—We have found nitrate of soda to be a most excellent thing in its place. In combination with complete fertilizers it has given astonishing results, even on poor, sandy soil. Its effect on certain garden crops is often

magical. But our friends should not be deceived to suppose that it answers all the purposes of a complete fertilizer. Its proper place is on already rich garden soils, and for early vegetables, especially such as are grown for their leaves or their stalks, like lettuce, cabbages, asparagus, or for their succulent bulbs, like radishes, beets, onions, etc. Nitrate of soda, however, seems to have but little effect on potatoes (except, perhaps, to help in pushing them for earliness), on peas and beans. Nitrate of soda may be purchased from almost any dealer in fertilizers, at perhaps less than \$50 per ton, and at this rate it is one of the cheapest fertilizing materials obtainable for the purposes mentioned. Market gardeners should not fail test its virtues.

FERTILIZERS FOR THE PEACH.—At the February meeting of the Mississippi Horticultural Society, at Crystal Springs, Mr. J. M. McNeill read an interesting paper on The Peach. Speaking of the best fertilizers, he said:—The analysis of the peach shows that the wood contains from 56 to 62 per cent. of potash, lime and phosphate of lime, the constituent portions being about two-thirds lime and phosphate of lime, to one-third of potash. Guided by this analysis, some experienced fruit growers have advised the use of kainit at the rate of 500 or 600 pounds to the acre, sown broadcast during the winter. Afterward, lime and bone dust, or ground bone. Now, to supply the soil for peach trees with a sufficiency of humus, which is very much needed in most of our orchards, there is nothing better than to sow field peas broadcast, and after maturity of the peas to place the vines under. If such orchards could have a good supply of unleached ashes once a year, even without the kainit, we believe it would be attended with the best results as to the growth and the life of the tree, and crops of fruit.

This is our experience with those trees upon which we have tried it.

The President, Mr. H. E. McKay, said :—

ASHES AND BONE DUST, wet and left in a pile a few weeks before planting, was shown to be an excellent fertilizer for corn or any other crop. In throwing it in a pile on the ground it may be covered with earth to fix any ammonia that may be released by the action of the ashes.

Limo and salt mixed in a pile in the same way and left two months makes a fine fertilizer.

HORTICULTURAL.

HARDY APPLES.

Dr. Hoskins a famous orchardist in Vermont, says in *The American Garden*, that there is a class of apples between the more tender sorts, and the two iron-clads, which are worthy of attention by those who live on the border between the Baldwin zone, and the cold north. This region crosses New England and the maritime provinces, touching as far north as Montreal.

The kinds are Red Astracan, Yellow Transparent, Oldenburgh, St Lawrence, Fameuse, or where this spots, the Shawassee Beauty, known also as Fall Queen, a large brilliant red fall apple, Nodhead, Timmouth, Northern Spy, McLellan, and Westfield Seek-no-farther.

The Westfield Seek-no-farther, with us, has proved rather a poor grower, and we would venture to substitute the American Golden Russet as more desirable as an all-winter apple. And among the fall apples we would substitute the Alexander for the St Lawrence. We have not tried the Nodhead or the Timmouth.

PEACH YELLOWS.

Now that peach growers in Canada have some reasonable expectation of

crops of this fruit, they will be pleased to know of any means to help the thrift of their trees. The failure of the last few years has led to such general neglect of the peach orchards, that no more unsightly trees can be found, and they are, in many cases, but an eyesore to their owners.

The Yellows, which has been so long known in New Jersey has in latter years invaded Canada, and in some cases cleared out whole orchards. So far, the only cure has been "Cut down and burn," but now we hear that potash fertilizers are an antidote. Well, if so, we in Canada may easily keep clear of this disease, for wood ashes are abundant, and are easily applied.

Small Fruits.

TRAINING THE RASPBERRY.

BY SIMON ROY, BERLIN, ONT.

The usual practice in training the raspberry in the well kept gardens of the wealthy classes in Scotland, which are under the management of competent superintendents, is what may be termed the pillar-and-arch system.

The rows are planted at about 6 ft. apart, and at about 3 ft. apart in the rows, and the plants in the two rows opposite to each other. A portion of the canes (not more than three) are selected to form the pillar on the outside of the rows, and cut back to a uniform and desired height. The remaining canes are bent from each side and tied together in the centre, thus to form the arch or tunnel as you may call it, and the whole when finished will present an unique and artistic appearance.

The advantages of the above mode of culture are apparent, a large and economic surface to sun light and heat, thereby producing finer fruit and in greater abundance than can be effected

by any other system; a better chance for the management of the young canes, as being more easily separated, and for cutting out the old wood, which should be done immediately after the fruiting season is over.

The ground may be cultivated at any time previous to getting the canes again into position.

The slip-shod style of growing raspberries on the hedgerow system as practised in this country I fail to see the philosophy of. The fruit is certainly not as good as it might be from the fact that the canes are too much crowded together, and to keep the rows clear of thistles, quick grass, weeds, and other obnoxious seeds must be rather a tedious operation.

In either systems I fail to see any difference in so far as the cultivation and the gathering of the crop concerned.

The varieties usually in cultivation in Western Europe are the Red and White Antwerp, which are well adapted for training on the pillar-and-arch systems; but I find that our native cultivated varieties, both red and black of robust growth, are equally as well adapted for training on the same system.

SMALL FRUIT NOTES.

JEWELL STRAWBERRY. Sir:—In reply to your note in *Horticulturist*, regarding Jewell Strawberry, I would say that with me it is a very strong grower. I have no variety on my place that makes such large, strong plants, but it makes very few of them, hence it will be little trouble to keep it within bounds. W. W. HILBORN, Arkona, Ont.

Sir:—I cannot let the assertion go forth that the Jewell is a poor grower. I had it before it was offered for sale. It is a healthy plant, vigorous grower, more so than Sharpless; berries are of the largest size; very productive; the

only fault (and is a good plant that has none) it makes but few runners.

JOHN LITTLE, Granton, Ont.

THE LOGAN is a new seedling strawberry of Mr. J. H. Haynes, Delphi, Indiana. He writes that indications are that it will prove the best yet offered.

THE ERIE BLACKBERRY. Sir:—I notice on page 76 of the *Horticulturist* for this month, a request for the experience of any one who has given the Erie Blackberry a trial. I had the first plant in Canada, from the person who sold the stock to the person who now offers it for sale. I got the plant in the spring of '84. It is a good grower, but it has been killed every year to the snow line. I have not seen a berry yet, and don't expect to here. It may do better in more favoured localities. At the same time I bought two dozen of the Early Cluster at \$6, and one dozen of Stayman's Early, \$6. They are just as worthless as the former, notwithstanding all the extravagant recommendations they have had.

JOHN LITTLE, Granton, Ont.

A QUART BOX. Sir:—On page 94 (March number), I find it stated that 67 cubic inches is a full quart. This is not quite correct. The Imperial quart contains 69.318 . . . cubic inches.

THOS. BEALL, Lindsay.

BIG STRAWBERRIES AND LOTS OF THEM.—Whether we are growing them for family use or for market, the question is, how can we have them, and from years of experience, while we know that oftentimes satisfactory and paying crops can be grown under almost any system of culture and on any soil, yet to have "big berries and lots of them," we must give up our old and slipshod methods of culture, and give only the best and most thorough care from beginning to end. This does not necessarily mean being at any great expense either in

cash or extra labor; *it simply means doing the very best we can with the means at our disposal*

Good corn or wheat land (which can be found on any farm), plowed deep and followed by a sub-soil plow, if possible, is the first essential. Give the land a liberal manuring on the surface after plowing, with raw ground bone and wood-ashes, if they are to be had, if not, muriate of potash; from 400 to 600 pounds of the potash, and from 1,200 to 2,000 pounds of bone per acre, the quantity depending somewhat upon the natural fertility of the soil. Whatever manure is used it should be thoroughly harrowed in, to prepare the ground for planting, which should be done in early Fall or very early Spring. Plant only the most approved varieties, young, thrifty, well-rooted plants, propagated with care from Pedigree Stock (never using plants from old and wornout fruiting beds); and give good, clean culture at all times, remembering that it is much cheaper and easier to hoe a field three times a month than it is once.

Use a mulch of some sort, to give winter protection and to keep ground moist and fruit clean in Summer, and irrigation, if possible. The foregoing general rules, only fairly well carried out, will in most cases, give "big berries and lots of them," at a less cost than a small amount of inferior fruit can be grown for under a less thorough system of culture.—*J. H. Hale in Wine and Fruit Grower.*

Scientific.

THE APPLE SCAB.

(*Fusicladium dendriticum.*)

It is high time that we in Canada were awake to the importance of combatting this dangerous scourge of our apple orchards. Every year this fungus

is gaining ground upon us, and threatens the total ruin of the apple crop, which has been the pride of Western Ontario. New York State, Michigan and Wisconsin are equally affected, and a Prof. Arthur in New York, and a Prof. Trelease in Wisconsin, is earnestly studying out its nature, and the best possible remedies; who in Canada will befriend our Horticulturists by careful experiment.

One of the most interesting reports we have received is one kindly sent us by Mr. Frazer S. Crawford, of Adelaide, South Australia, on the opportune subject of the Fusicladia. The name Fusicladium is applied by scientists to that genus of the family of Black Moulds, known generally in Canada as the apple scab, pear scab, and apple leaf blight. We have known it in Canada since about the year 1865, but we then paid little attention to it, supposing that it was only a temporary evil.

KINDS AFFECTED.

It began with the *Fall Pippin*, our very best fall apple, and in a few years so ruined the fruit that it was utterly worthless for shipping. Not only that, but the trees themselves seem injured by it, and have ceased to bear their usual crops of fruit.

Since that time the *Fameuse*, *Early Harvest*, *Rambo*, and *Newtown Pippin*, have shared the same fate. Even in the northern sections, as appears from Mr. Croil's paper read at the Chatham meeting, where the *Fameuse* has been so fair and clean, the same sad story reaches us.

The *Spitzenburg* and *Baldwin*, though less disfigured by the spot, have borne very scant crops for three or four years past, and what little they have yielded has been small and misshapen.

Some four or five years ago we found some *Greenings* slightly affected. Now, the fruit on those trees is almost as bad as that of the *Fall Pippin*.

According to Prof. Penhallow, of Quebec, 90 per cent. of the fruit of the *Walbridge* apple was worthless from the scab last year in that province. And now, with great dismay, we notice that it is attacking our favorite apple, the beautiful Northern Spy.

THE FUSICLADIUM

is a parasitic fungus—that is, it belongs to that class which preys upon living substances, and not upon dead matter, like the mushroom; and in order that no confusion of terms may arise, Mr. Crawford advises horticulturists the world over to call it, not spot, rust, scab, or mildew, but *Fusicladium*.

The plant, for such it really is, is so minute, that it can only be examined by a good lens, and the seed spores are so very tiny that Prof. Crawford tells us it would take 3,200, side by side, to reach one inch. How these seed spores are preserved through the winter, is still an open question, but such minute bodies would easily be carried about in the air in early spring, and settling upon a leaf or young apple begin quickly to germinate in favorable weather. The spore sends out a slender tube, which, according to Prof. Trelease, of Wisconsin, is probably able to pierce the skin of the leaf. In case of the apple itself, he thinks it might find entrance through one of the little dots, for over it the outer skin is often split. As soon as it gains entrance, this tube begins to branch out, and thus form the mycelium, or that part which corresponds to roots, and this, as it grows, burst open the epidermis, or outer skin, and throws up little brown threads, or stems. These grow up to a certain height, and each produces a single spore.

We copy from the plates in Mr. Crawford's Report the illustrations shown below, which may help our readers to understand the growth of this fungus.

Fig. 1 represents a section of the apple scab magnified 200 diameters;



FIG. 1.—Section of an apple scab.

and Fig. 2 a section of an apple leaf through a very small spot, also magnified 200 diameters. The spots upon the apple

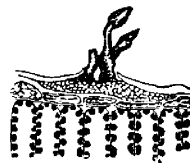


FIG. 2.—Very small leaf spot.

leaf appear on the surface, somewhat as is shown in Fig. 3, and soon the part turns black, or, if badly affected, the leaf



FIG. 3.—Leaf affected by *Fusicladium*.

drops off. Last summer the apple tree leaves blighted so seriously in the Niagara District as to almost strip the trees, and much of the fruit fell with them. Many attributed this to the use of Paris Green, but it was particularly observed by the writer that the leaves shrivelled and fell just as badly in orchards that had not been treated with the poison, so that it could not have been due to its use. This occurred in the month of June, when the apples were about as large as marbles. Further investigation will determine whether it is entirely owing to the spread of *Fusicladium*.

REMEDIES PROPOSED.

All remedies so far tried in Australia

seem to have failed, such as spraying with solutions of caustic soda, carbolic acid, or sulphur in water. Some of us in Canada faithfully tried the sulphur several years ago, at the suggestion of Prof. Saunders, without the least effect; but we neglected, at least the writer did, to try another remedy which he proposed, and which has since been tried with some success at the experiment station at Geneva, N. Y., viz.: spraying the trees with a solution of hyposulphite of soda in water, in the proportion of one pound to ten gallons of water.

It was applied on the 5th, 9th and 15th of May, with good results. It was found that the percentage of uninjured fruits on the syringed portions of the trees was much greater than that upon the unsyringed portion; and also that the fruit was of a larger size. The hyposulphite of soda might perhaps be thrown into the barrel of Paris Green water as used for spraying the Codlin Moth, and thus a saving of time and labor be effected.

We have occupied more space with this subject than we intended, but we hope for pardon because of its importance just at this season; trusting that it may lead our horticulturists generally to experiment carefully with the remedy proposed, and report to us their success or failure, in the interests of one of the most important industries of our Province.

SOME INSECTICIDES AND FUNGICIDES.

For convenience of reference, we mention here a few insecticides, which may be of great service to our readers during the coming summer.

(1) **CODLIN MOTH.**—Spray trees with Paris green and water. Mr. James Fletcher, Dominion Entomologist, advises the proportion of one tablespoonful to 40 gals. of water. Paris green

is a combination of arsenic and copper, and if too strong burns the foliage.

London purple, which is preferred by some, is an arseniate of lime, is more soluble in water and less poisonous. Prof. Riley prescribes London purple, $\frac{1}{2}$ lb.; cheap flour, 3 qts.; water, 40 gallons. The flour, and then the purple, are to be washed through a fine sieve, at bottom of an iron funnel. Then add the water.

Apply just after the flowers have fallen.

(2) **CURCULIO.**—Spray trees with either of above mixtures. A kerosene emulsion is also commended by Prof. Riley, using kerosene, 2 gals.; water, 1 gal.; strong soap, $\frac{1}{2}$ lb. Mix hot and and churn five minutes, then add nine times the quantity of water.

(3) **CATERPILLAR ON CABBAGE.**—Pyrethrum, or Persian insect powder, $\frac{1}{2}$ oz. to pail of water. This powder is harmless to vegetation, and comparatively so to human beings.

(4) **APHIS ON CHERRY, ETC.**—Pyrethrum powder, 2 oz. to gal. of water.

Or kerosene emulsion, as in No. 2.

(5) **DOWNY MILDEW ON GRAPES.**—The following is recommended as the most effective preparation in use, viz., 18 lbs. sulphate of copper dissolved in 22 gals. of water, mixed with 34 lbs. of lime, dissolved in 6 $\frac{1}{2}$ gals. of water. Apply with a whisk.

Another and simpler remedy, used with great success in France, is the following: Dissolve 2 $\frac{1}{2}$ lbs. of sulphuret of potassium in 4 gals. of boiling water; dilute with 40 gals. of cold water and strain. Spray the vines by means of a hand pump before blossoming time.

(6) **POWDERY MILDEW.**—Dust with flour of sulphur on first appearance.

(7) **GRAPE ROT.**—Prof. Scribner, of Washington, advises, as follows:—“Promptly remove, burn or bury all affected berries or leaves. Do this year after year, and the disease may at

last be wiped out. Protection from rain and dew is also a preventive. The rot spores do not germinate in dry weather. Bagging, if done early, almost always protects the berries from rot."

M. Crawford writes, in *Wine & Fruit Grower*, I have reason to believe that copperas is a preventive of the grape rot. In a small vineyard in Massillon, Ohio, where a quart to the square rod has been sown in July for three years, there has been no rot, while other grapes in the same neighborhood have rotted more or less every year. They formerly rotted in this vineyard.

(8) DESTROYING THRIPS.—A correspondent of the *Gardener's Monthly* describes his mode of destroying the thrips on his vines. After using hellebore with partial success, he employed burning kerosene, using a wire cup with a long iron handle, placing in it paper saturated with kerosene, which was ignited and passed rapidly and carefully over the foliage, avoiding the fruit. This was found the most efficient way of destroying the thrips.

(9) ROSE MILDEW.—Jean Sisley, of Lyons, France, the celebrated rosarian, says that about six pounds of salt to one hundred quarts of water has been found a complete cure for mildew and other low cryptogamic forms of plant life.

A Commendation. Sir:—Your publication is becoming increasingly interesting, each succeeding issue apparently outdoing its predecessor in interest and value to the orchardist, the landscape gardener, and the florist.

Wishing you every success,

I remain, very truly yours,

ROBERT HARRISON.

Belfast P.O., Huron Co., Ont., }
April, 1887. }

Flowers.



PANSIES.

Fit emblem of a kingly race,
You bear your heads with regal grace,
Yet show withal a modest face,
O, royal purple pansies!

You turn my thoughts to childhood's hours;
We had a garden then of flowers,
Gay and bright with rosy bowers,
And beds of golden pansies.

O, we were happy children then
Roaming wild through wood and glen,
Baby-faces we called them then,
These blue and yellow pansies.

They were our mother's favourites too,
Royal purple, and brown and blue,
Velvety black and yellow too,
And dainty pure white pansies.

We have left the homestead many a year.
That garden's but a memory dear,
That comes before me bright and clear,
Whenever I see pansies.

HILDA B. MONTY, in *The Mayflower*.

THE GLADIOLUS.

BY HERMANN SIMMERS, TORONTO, ONT.

I WOULD again remind the readers of *The Horticulturist* of the necessity of planting this beautiful variety of bulbs during the present month, the proper date being from middle to the end of May. Plant the bulbs two inches below the surface of the ground, in thoroughly well manured soil; if inclined to be sandy, it is all the better suited

to them, as they are not inclined to rot so much as if planted in heavy soil. The bulbs sometimes are started or sprouted in a hot-bed, and then planted in the open ground to insure earlier bloom; but my experience leads me to think they are just as well if planted directly in the open ground.

I have tried several experiments in order to secure larger bloom, and the best article for that purpose, and the one that causes the least trouble, is "Bowker's Ammoniated Food for Flowers," a preparation which is diluted in water—one teaspoonful of the powder to a gallon of water. As a rule many people select the largest bulbs, but generally speaking they turn out to be the ordinary Red Gladioli, while some of the smaller bulbs produce varied colours and are by far the handsomer. Do not be misled into thinking this is the case in every variety, for several of them have extremely large bulbs and very handsome spikes of bloom. Gladioli are best suited for centres of flower beds, or for backgrounds, as they grow to a height of from two to two and a-half feet, towering above the other plants. When flowering, nothing is more satisfactory than the Gladiolus; the beautiful exact markings of the flower, streaks, and blotches, place it amongst the leading bulbs for any flower garden. A word here for the amateur who wishes to lengthen the duration of its bloom: When the Gladiolus approaches blooming, as soon as the bottom flower opens out, cut the stem off and place it in water, where it will open the balance of the buds and continue much longer in flower than it would were it allowed to remain on the plant. I have tested this, and can vouch for its being satisfactory, as I handle probably the largest quantity in Canada, and therefore require some means of extending the duration of its bloom.



THE GLADIOLUS.

HINTS ON THE FORMATION AND IMPROVEMENT OF GARDEN LAWNS, CROQUET GROUNDS, CRICKET GROUNDS, TENNIS LAWNS, ETC.

BY JOHN A. BRUCE, HAMILTON.

In the first place, careful preparation of the ground proposed to be laid down to turf is necessary. This should be commenced in the autumn by draining, if found requisite, and digging to the depth of six to twelve inches, according to the nature of the soil. When this has been done, the land should be levelled and made firm with the spade and subsequently raked, to remove stones, etc. Should the natural soil be too stony, it will be advisable to procure a supply of good mould, and spread this over the land to the depth of two or three inches. If the soil is poor, some well-rotted stable dung will be very beneficial. Where this cannot be obtained, we would advise, as the best dressing of artificial manure, 200 lbs. of superphosphate of lime and 100 lbs. of Peruvian Guano per acre. In April, after the ground has been made thoroughly fine and clean, a heavy iron roller should be used to make it perfectly level, and as the subsequent appearance of the lawn depends in a great measure on this part of the preparation, we cannot too strongly urge the importance of its being well done. The ground should then be evenly raked and the seed sown. April or May, and September, are the best months for sowing. As to the sorts of seeds suitable for garden lawns, etc., we can, after a long course of personal observation of the numerous kinds which have come under our notice, confidently recommend the mixture described below as most certain to produce a close velvety turf.

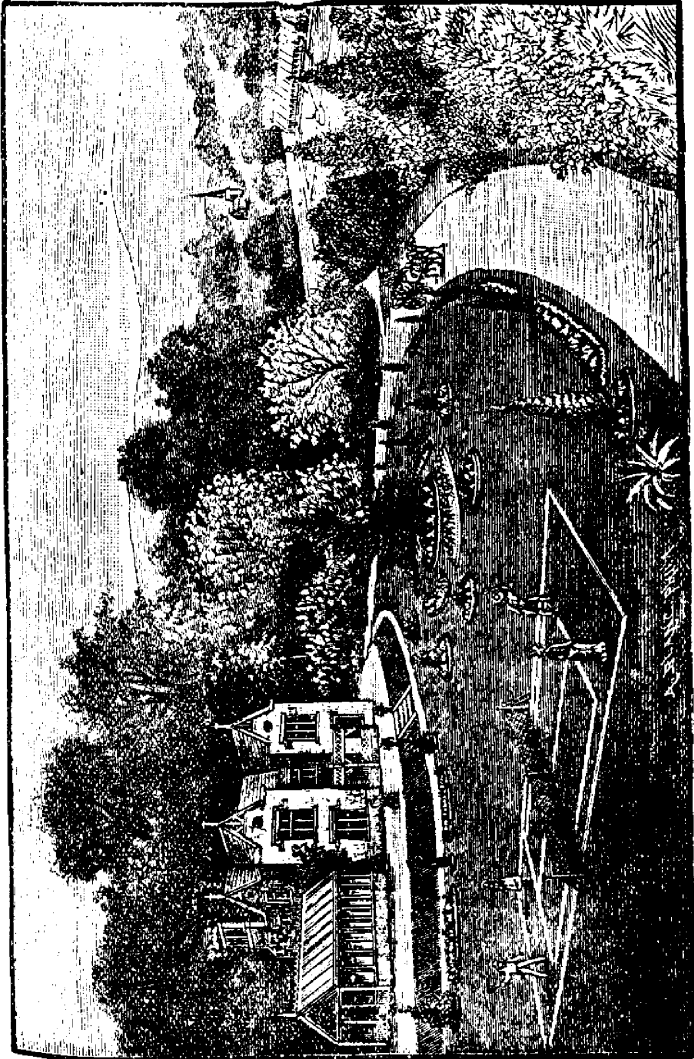
After the sowing has been accomplished the ground should be again rolled, and as soon as the young plants have attained the height of two or three

inches, the whole crop should be carefully gone over with a sharp scythe. *Frequent mowings and rollings are indispensable to maintain the turf in good order.* By adopting these means a close, green sward will be obtained in nearly as short a time as a lawn produced by sodding, while it will be far more permanent and at much less expense.

It will sometimes happen that annual weeds, indigenous to the soil, come up; these can easily be checked, if not destroyed, by mowing them off *as soon as they make their appearance.* Plantain, dandelions, and sometimes thistles, too, will often appear, and these must be cut up, each one singly, about one inch below the surface (not deeper), and about a teaspoonful of salt dropped over the cut part. Birds are very fond of grass seeds, and care should be taken to keep them off until the seeds are well up.

For lawns requiring improvement it is only necessary to sow fresh seed, either in the spring or autumn, using a small tooth rake, and rolling afterwards. Moss in lawns is generally a sign of poorness in the soil or want of drainage. To effect its removal we advise after raking off as much as possible, a top dressing of quicklime, mixed with rich compost, applied late in the autumn, and a sowing of more seed in the spring, or a top sowing of soot will, by encouraging the growth of the grass, destroy the moss. This should be applied in the spring at the rate of about sixteen bushels per acre.

On croquet or cricket grounds, where the turf has become bare through constant use, we advise a thick sowing of seeds on the bare spots in September or early in April, rolling subsequently and mowing as soon after as practicable. A light dressing of manure over the whole, laying square during the winter, will often be found beneficial in encouraging



A WELL-KEPT TENNIS LAWN.

the growth of finer kinds of grasses, and to help to produce a close-growing turf. We should not omit to mention that here, as in fine garden lawns, mowing alone will not ensure a good bottom without that compression which a roller alone can give.

During the past thirty-five years we have conducted a series of experiments with the various grasses recommended for lawns, and find the following varieties best adapted for the Canadian climate, viz. :—

Blue Grass (*Poa Pratensis*).

Creeping Bent Grass (*Agrostis Stolonifera*).

Crested Dogtail (*Cynosurus Cristatus*).

Slender Fescue (*Festuca Tenuifolia*).

Not less than 40 lbs. per acre should be sown, and in many instances we have known 60 lbs. to be sown on an acre with excellent results. We would include with the above grasses two to three pounds of white Dutch clover, which we think improves the appearance of the sward.

ORNAMENTAL PLANTING.

EVERY ONE who owns a homestead or farm ought to have a good plan of it, showing the position of woodlands, pasture, tillage, unproductive land, buildings, roads, ornamental grounds and kitchen gardens. The watercourses and differences of level should also be shown. The roads and buildings should be located for convenience, but when the conformation of the grounds or a grove or group of trees makes it best to have the roads and paths deviate from the straight line, picturesqueness is gained and no convenience sacrificed. It is often possible to turn a road or path by planting an artificial reason for doing so, and gain the pleasing effect without any great inconvenience resulting.

Ornamental planting must be ad-

apted to the conformation of the land and the uses to which it is to be put, so as to increase its natural beauty, forming vistas which shall add to the landscape effect, and scenes which no human artist can reproduce.

Trees should be planted so as to give protection to both bipeds and quadrupeds; the north and north-west side of the buildings should be defended and kept warm by evergreen groves, which as a precaution against woodland fires should not be nearer than thirty or forty feet. A gravel walk or road around all buildings is an additional protection. The beneficial influence that the rays of sunlight contain should be allowed to reach the dwelling apartments of all living creatures in house or barn, in summer as well as in winter; and trees should not be so placed as to prevent this as they become large. The evergreens seem best to deserve the name of protective trees against cold and wind, while the deciduous trees defend us from heat; but both join to produce the best ornamental effect.—*Report Mass. Hort. Soc., '87.*

FLOWERING BEGONIAS.

BY J. P. COCKBURN, GRAVENHURST, ONT.

THE most beautiful of the flowering family of Begonias is Rubra. The great beauty of its bright green waxy leaves and almost perpetual free flowering habit, makes it one of the most desirable window plants. The Begonia Rubra is a soft wooded plant, but not so succulent as most other sorts. Its growth is very rapid during the spring and summer months. They succeed best in a soil in which there is plenty of fibre, enriched with well decayed cow manure, made light with clean sand; watered and cared for generally as an ordinary geranium. Young plants started in three or four inch pots, will flower freely all summer and throw up a strong spike or shoot from the root of

the plant, which, under fair cultivation, will be strong enough to make a live stake two feet high to tie the parent plant to. At this stage the plant should be shifted to a larger pot, when the natural stake will send out branches and prepare to flower. In the meantime the old wood has been in bloom. In August or September the plant will make a special effort and come out in "great glory." As this season approaches, a little weak liquid manure, given once or twice a week will greatly add to the beauty of the flowers and foliage.

As the plant increases in age, the annual shoots increase in size till at 5 or 6 years, the plant forms a grand clump or specimen plant 5 to 10 feet high, loaded with great trusses of bloom. Most Begonias require much shade, heat and moisture, but the Rubra is happy in sunshine, and does not murmur if the thermometer occasionally drops to 35° in winter, or goes up to 110° in summer. It positively refuses to harbour any vermin, and has no home on its shiny leaves for dust.

Strange you seldom see this grand plant decorating the verandah, or, as it should do, standing majestically among our noblest window plants. If any of the members of our society have not yet grown this plant, I advise them to commence at once.

21st March, 1887.

A MARVELLOUS HYACINTH. — SIR: — Talking about success and failure in Hyacinth growing, many will be surprised to learn that in Toronto a lady has grown four distinct stems of Hyacinth from one bulb, all in bloom at one time and a perfect marvel of splendid growth. The flower stems were all of a size and beautiful pink; variety, Lord Wellington. This beats anything ever seen in Hyacinth growing so far.

Can any one of your readers say to the contrary?

Yours truly,
ANTON SIMMERS.

Toronto, Feb. 21st, '87.

THE LIGHT from an electric lamp tower at Davenport, falls full upon a flower garden about 100 feet away, and during last Summer the owner observed that lilies which usually bloom only in the day opened in the night, and that morning-glories unclosed their blossoms as soon as the electric light fell on them. It has frequently been observed that trees were most exuberant in their foliage on the side nearest the electric light.

Biographical.



CHARLES DOWNING, THE MAN OF LETTERS,
THE SUCCESSFUL FRUIT GROWER AND
THE VENERABLE HISTORIAN.

WRITTEN FOR THE CANADIAN HORTICULTURIST BY
L. GOTT, ARKONA, ONT.

As the well tried leaders of society and public thought one by one pass away from our midst, and the tired veterans are quietly laid away to their rest, it plainly becomes our privilege and duty to take note for future reference or reminder. In some cases the material for note-taking is very plentiful, but in other cases, like the present,

it is very scant. When great men fall society deeply feels and laments the wide-spread loss. The great man is very often quite reticent concerning himself, and although widely valuable work is done, is not always known as the author of it. Were it not for the stupendous work of labour left to benefit the present generation and those in the future, we should not cease to lament the demise of the subject of the present notice. Even with this legacy his presence in the world of action will be greatly missed. On

THE BEAUTIFUL BANKS OF THE HUDSON, the most noted and the most beautiful of all American rivers, Charles Downing was born, of humble parentage, July 9th, 1802; and thirteen years afterwards on the same romantic site was added to the family circle his gifted and famous brother, A. J. Downing, the early author of many popular works on economic horticulture. Their father was a nurseryman of some considerable experience and culture, and owned a good property near his home in Newburgh, N.Y., where he did a large business. But before the subject of our notes had attained his majority his father died leaving the whole control of the business to devolve upon Charles. But later, as the younger brother had completed his school training, necessary for business, they together carried on the work of their father under the joint firm name of C. & A. J. Downing, and later of A. J. Downing & Co. After a few years, however, Charles purchasing a property a short distance from their old home, establishing his well known

"NURSERY AND EXPERIMENTAL GARDEN."

At a very early date the Downings became very widely known for their deep and broad intelligence in matters pertaining to general horticulture and fruit growing. The development of

fruits, their nomenclature and classification were specialties with them, and they speedily became very popular as advisers and corresponding members of many local and foreign horticultural societies. In the language of a fair correspondent, "During the 21 years Charles is but little heard of, while his young and talented brother astonished the conservatives of the whole world with his 'Landscape Gardening' at the early age of 26 years. Then came his 'Cottage Residences.' Then the volumes of 'Downing's Horticulturist,' and in 1845, when but 30 years of age, appeared 'The Fruits and Fruit Trees of America.' The correspondents of Charles Downing of the past half century need not be told that he was the great laborer of his age in the field of untangling the confusing nomenclature of the fruits of temperate zones." My venerable and esteemed veteran friend

J. J. THOMAS, OF NEW YORK, contributes the following notes of information bearing on the subject:—"I first met the two brothers at the state fair at Albany, 1842, where they had a fine exhibition of fruit—at that time one of the finest I had seen. Charles Downing then showed his simple, straightforward character. I had charge of the exhibition of fruit, and was to meet them early the next morning before the arrival of the great crowd to examine their exhibition. I found Charles there at the minute appointed. I asked him where A. J. D. was? 'Oh, he was down at the city among the big folk.' This simple, unpretending character was always the same through his long life. He greatly disliked any kind of pretention and strongly expressed his disapproval on one occasion of the word 'Esq.' attached to his name. Three years later I visited him at

HIS RESIDENCE AT NEWBURGH. Partaking of an early meal, I went to

his house and found him and his wife at breakfast. His wife told me afterwards that she felt greatly embarrassed, when I entered, because (supposing I had had no breakfast) they had neither tea nor coffee on the table, having adopted the simple beverage of cold water. She was, however, entirely relieved when I informed her that for many years I had drunk nothing else. I mention this incident to show their simple manner and mode of living, although owning and living in one of the finest residences on the banks of the Hudson. Charles Downing

GAVE SPECIAL ATTENTION TO FRUITS, and to securing accurately the many varieties in cultivation, more so than his brother, and to him mainly was to be attributed the reliability of everything they raised. I procured of him on one occasion a number of valuable articles and asked him for his bill. "I have no bill," he replied, "and if that is not satisfactory, you may do as much for somebody else when opportunity offers." The same pleasant and generous course was often pursued by him. He made it a point to procure every variety of fruit he could hear of that was deemed worthy of cultivation; and his correspondence was extensive to all parts of the Union for grapes and specimens of fruits. Although he had procured these he seemed glad to disseminate at any time to all who desired. He retired from the nursery business some thirty years ago, and then gave his attention more exclusively to pomology.

Charles Downing, giving up his business in the winter of 1857 and 8, and for the next ten years used his place as an experimental garden, where he tested and fruited

MANY THOUSANDS OF VARIETIES in their greatest possible range. He being very quiet and reticent in his

daily habits, his life was an unobstructive and uneventful one, he scarcely ever making himself public through the papers, and not very frequently attending the horticultural or other meetings, and when he did so had seldom much to say.

WORK! HARD, PERSISTENT WORK! seemed to be his motto, and in that he was eminently successful. After his active outside activity he spent very much of his later years of life in rewriting, revising and adding to the popular national work of his younger, brilliant but deceased brother. The

FRUITS AND FRUIT TREES OF AMERICA is now the only monument of the brilliant A. J. D., but it also owes much to the careful work and deeper experience of the elder Charles. It is a pillar of renown, and will stand a monumental remembrance of the Downings. Charles several times added to it much valuable new matter, being all the result of his own deep observation and extensive experiments, and finally had the great satisfaction of living to see his great work carried successfully through the press,

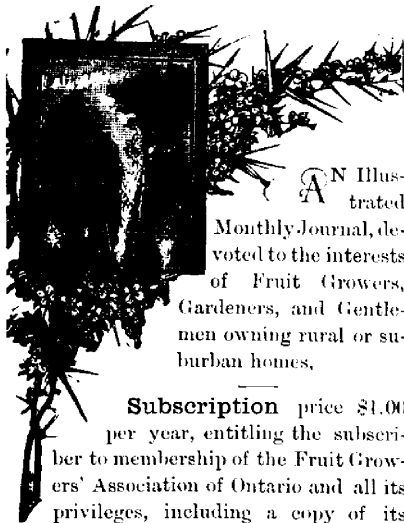
OCTOBER 22ND, 1882.

Mr. Downing suffered severely from the injuries caused by an accident in the city of New York, which laid him up for many weeks in helplessness. During his time many very valuable notices of worth and respect were issued from the various sections of the press, all of which were very pleasing to the many friends of the injured gentleman. To quote again from a lady friend, "Not a garden in the land or a home worthy of the name that is not the better for his steadfast watchful devotion to the progress of our horticulture." Mr. Downing kept at his work of testing fruits and making notes up to within a few weeks of his death. He died January 18th, 1885, in his 83rd

year. He leaves a vacancy which will not be filled. Neither he nor his brother left any children to perpetuate their memory. Many of the agricultural and horticultural papers contained notices of obituary, and many societies passed resolutions of regret.

Thus we have very briefly and imperfectly, but as fully as our information would allow, attempted to fulfill your desire to give you a notice of Charles Downing. The industrious in praiseworthy work, as well as the righteous "Shall be held in everlasting remembrance."

THE
Canadian Horticulturist.



AN Illustrated

Monthly Journal, devoted to the interests of Fruit Growers, Gardeners, and Gentlemen owning rural or suburban homes.

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.

This Journal is not published in the interests, or for the pecuniary advantage of any one, but its pages are devoted wholly to the progress of Horticultural Science and Art in Canada. We aim at the development of the fruit growing industry in our Province; at the general distribution of knowledge con-

cerning all the newest and best varieties of fruits; and at the education of a refined taste in the art of decorative gardening around the homes of our Canadian people.

With such ends in view we invite the co-operation of the lovers of Horticulture both in extending the membership of the Fruit Growers' Association of Ontario, and in contributing to these pages such items as may be of general interest and profit.

Report for 1886.— I am sorry to notice in the *Horticulturist*, that '86 report is under the usual size. By the way, I would like to see those reports bound by the Ontario Government. I have to pay 70 cents a copy to get them bound. D. E. BLOOMFIELD, Scotland.

It is a matter of general regret that the Report for 1886 should be so unusually small. The Report for the winter meeting at Stratford, in February, '86, was taken down by an incompetent stenographer, and therefore fully one-half the matter was lost. We can safely promise the members of our Association a large enough Report of this year's papers and discussions to make up for that of '86.

The Secretary is now mailing the Report of 1886, having waited vainly for that of The Entomological Society. The latter will be sent separately when ready.

It would indeed be highly appreciated by us if the Ontario Government would continue binding the Reports, and we hope yet to obtain such a favor.

Firming the Soil.—In planting trees, vines, plants, or cuttings, especially in dry weather, it is all important to press down the earth firmly about them. Probably a good many of the complaints of failure with plants received from the Association have resulted from neglect of this important item. The planting of a tree seems to be a very simple operation, and yet the inexperienced planter will often make most egregious blunders. The hole

should always be dug much larger than the roots require, the earth should be made fine, and sifted in carefully among the roots, and then, when covered, should be well pressed down about the little fibres. This will help to protect them from the drouth by excluding the dry air, and at the same time impart to the soil increased conductivity of nocturnal dews.

The Niagara Grape Vine, which has been so largely chosen by the members of our association, should be planted deeply in well-drained soil, and in the autumn it should be laid down and covered. It is claimed to be fairly hardy, but the wiser plan is the safest. It is certainly a magnificent grape; holding the place among white grapes which the Concord does among the black. We shall hope soon to have certain knowledge respecting its hardiness, as the result of this spring's distribution of the vine to all parts of Ontario.

The Farmers' Institutes. — *The Rural Canadian* appears to think that the farmers are competent to make these meetings successful without the attendance of the professors from the Agricultural College. We are inclined to question this, because the time has come when theory and practice need to keep close company. And one great secret of the success that has attended these meetings thus far has been the presence of such men as Prof. Mills and Prof. Panton, who could give the reasons of things. This our farmers do not profess to do. They give us most valuable lessons from their experience, which either establish or annihilate the theories of the scientific student. But we shall fall into many errors if we attempt to deduct theories and lay down rules in either Agriculture or Horticulture, without consulting the Botanist, the Chemist, and the Physiologist.

Miss Rye writes us from Niagara that she has received a medal and certificate from the "Colinderies," for quinces grown on the grounds of the "Home." These medals, having on the face so excellent a likeness of His Royal Highness, the Prince of Wales, and distributed so freely to exhibitors at the Colonial and Indian Exhibition, will be very highly prized by the recipients.

Selfish Aims. — The *American Garden*, which by the way is improving with each issue, fears that financial gain or literary reputation is too much the aim among horticulturists of the present day. The work of originating new varieties, either from seed or by hybridization, is slow, and needs much patient endeavor. Who among us will be the disciples of such men as Wilder, Warder, Downing or Thomas?

Too Many Irons. — This is a significant term for a very common fault among farmers and fruit growers as well as among students. In these days of progress and of keen competition, it has become necessary for the best success in practical horticulture, as well as in professional life, to devote one's attention chiefly to one line and become master of it. Division of labor is a mark of progressive civilization, and the man who attempts to combine too many occupations will but prove the truth of the old adage, "Grasp all, lose all."

THE SUMMER MEETING.

THE NEXT MEETING of the Fruit Growers' Association of Ontario will be held in the town hall, Collingwood, Ont., on the 28th and 29th of June next, in response to the very kind invitation of the Horticultural Society of that place, and of the fruit growers of that section.

The meeting will continue two days, and will be devoted to the discussion of

such subjects in connection with Fruits, Flowers, Vegetables, or Forestry, as shall be proposed in the meantime to the Secretary.

The subjects thus far suggested are—

- (1) THE APPLE.
 - (a) Varieties adapted to Co. Simcoe
 - (b) " for foreign markets.
 - (c) Best modes of gathering.
 - (d) " " packing.
 - (e) " " storing.
 - (f) Cultivation of the Orchard.
 - (g) Fertilizers for the "
 - (h) Summer Pruning of the "
- (2) INJURIOUS FUNGI, with special reference to the Black Knot and Apple Scab, to be introduced by Prof. Pantou, of Guelph Agricultural College.
- (3) THE PLUM.
 - (a) Care of a Plum Orchard.
 - (b) Packing for Market.
 - (c) Yield per acre.
 - (d) Kinds grown about Collingwood
- (4) THE FOREIGN MARKETS.
 - (a) What fruits and vegetables can be profitably shipped.
 - (b) How to pack for foreign markets.
 - (c) How to ship.
- (5) THE STRAWBERRY.
 - (a) Best early variety.
 - (b) Best variety for main crop.
 - (c) " " " table.
 - (d) Cultivation and Fertilizers.
 - (e) Gathering.
 - (f) Packages.
 - (g) Newer varieties.
 - (h) Extent of Strawberry Plantations in the County of Grey.

A fuller programme will be given in the June number, and in the meantime any questions or suggestions for the meeting will be gladly attended to, if addressed to the Secretary.

A Question Box will also be upon the table and opened at the beginning of each session.

Eight months for 50c.—In order to enlarge the sphere of usefulness for the *Canadian Horticulturist*, we offer to send it to new subscribers for the rest of this year for fifty cents. Will our friends please help us by this means to introduce it into many homes where it is at present unknown.

LETTER FROM S. JACKMAN & SON,
FRUIT AND COMMISSION MERCHANTS, TORONTO, ONT.
The Editor Canadian Horticulturist.

SIR:—In the February number of your paper a letter appears from Jos. Bourne, of Niagara Falls South, hinting that we had received his grapes and never let him know the prices they were sold at till the season was over; and inferring that we had not treated him fairly.

We have placed the matter in the hands of our solicitor to compel Mr. Bourne to withdraw his untruthful statements and apologize for publishing them; but as he is in England, we write to say that we only received twenty-five baskets of grapes from Mr. Bourne last season, and these, upon two days in the same week, that we made up his account of sales on the following Monday and sent the money to him; and we don't believe any other person or firm could or would send it more promptly. We ask you to publish this letter, as your editorial remarks on the letter imply that you believe his statements and infer we are unreliable. Mr. Bourne never complained to us as to any of our dealings with him, and it is in bad taste for him to write you, for publication, a letter complaining about us, when he never hinted we had been negligent or careless in our business dealings with him.

S. JACKMAN & SON.

[NOTE.—We much regret if any injustice has been done this firm through anything in our columns. We supposed Mr. Bourne was simply stating facts for the benefit of his fellow fruit-

growers. With the exception of what Mr. Bourne has said, we have never heard anything unfavourable concerning the firm; and it will be observed that he only blames them for not giving him more prompt reports of the market, a matter over which shippers in fruit season are very impatient.—[Ed.]

USE OF PARIS GREEN.

Sir:—I have great pleasure in seconding Mr. Beadle's motion on page 279 of 1886, that all funny articles should be put in the facetious column; and there ought also to be a column for all doubtful or dangerous articles—such as Paris green, for it seems to kill as often as cure. See page 125 for F. W. Ross's experience, also page 156 for J. L. Thompson's, with a teaspoonful of Paris green to a patent pail of water and his killing the bugs and leaves at the same time. On page 176, W. Dixon fared better. On page 108, Senator Plumb uses a dessert-spoonful to a pail of water for his plum and other trees. Surely his name cannot have anything to do with his using such a large quantity so successfully.

In the summer of '84 I saw in the *Horticulturist* a recommendation to put a teaspoonful of Paris green in a patent pailful of water to kill the curculio on plum trees. Accordingly I put a teaspoonful of Paris green in a pail of water and sprayed my plum trees and killed the curculio and the leaves at the same time, and was minus my plums for that year. In 1885 I let nature have a chance and had half a crop of plums. Last year, after seeing so many favorable reports of spraying, I thought I would try it again, and this time with half a teaspoonful to a pail of water for six plum trees, with the same result as in 1884, and I came very near saying a bad word against Paris green and all who recommend it, but I restrained myself when I came

to think that I had *no patent on my pail* as recommended. But I see, on page 156, that Bro. Thompson, with his patent pail, fared equally as bad; and, on page 39 of 1887, Mr. Beall says the foliage is injured by using too much Paris green.

Now it is just possible that there are other conditions of danger in the use of Paris green, such as drought or sun heat. It was after the sun had been shining strong all day that I noticed small brown spots appearing on the leaves, and in a day or two more they began to curl and drop off and the fruit dry up.

I am of the opinion that there is much to learn as to the quantity, time and mode of applying insecticides (successfully). Could not some of our experimental farms be induced to try experiments with insecticides and report the best mode for success?

ALEX. GREY, Niagara Falls, Feb. 12.

[NOTE.—While it is well known that too much Paris green will destroy the leaves of the trees and cause the fruit to fall, we do not think half a teaspoonful, or a whole teaspoonful to three gallons of water could have any such effect. Some other cause seems to have contributed to the fall of the leaf last season.]

Question Drawer.

This department is intended as an open one to every reader of the "Horticulturist" to send in either questions or answers. Often a reader will be able to answer a question which has been left unanswered, or only partially answered by us. For convenience of reference the questions are numbered, and any one replying or referring to any question will please mention the number of it.

THE CURRANT SPAN WORM.

34. Worms on the Black Currant.—*We are troubled with a worm on our black currant bushes. They nearly destroyed the bushes last season. They are a little larger than the common currant*

worm, and of lighter colour; white hellebore does not affect them. Can you give us a remedy?

[C. CURTIS, Leamington, Ont.]

The worm is probably the Currant Span Worm, known to entomologists as *Eufitchia ribearia*. It is of a lighter colour than the common currant worm or Sawfly, being whitish, with wide yellow stripes; and it is about an inch or more in length. But it is chiefly distinguishable by its mode of travelling, from which it is called a Geometer, or Span Worm; for at every step it gathers its body into a loop, as if measuring. When disturbed it hangs down by a silken thread, which affords one means of destroying it; for by means of a stick the threads with the suspended caterpillars may be gathered to one place and stamped upon.

As our correspondent says, it is not easy to destroy them with hellebore; but if he would try a stronger solution, say three ounces of hellebore to ten quarts of water, he would no doubt succeed.

Another effective mode of application is to dust the bushes freely with hellebore, when they are wet with dew. As hellebore is volatile it must be kept carefully from exposure to the air until used, or it will lose its strength.

Paris green would be a more certain remedy, but would need to be used some weeks before the fruit is ripe, so as to be completely washed off by successive rains.

35. Trees in Rocky Soil.—*I have a piece of ground about two acres, too stony to break and clean up. Would an apple orchard do well on it by keeping the ground well dug and free from weeds for two or three feet around the trees for a few years? Soil, loam of average quality; situation, high and dry.*

[R., Penetanguishene.]

Yes, you can make an apple orchard do well on such a place, only it will

entail more labour. The writer has some two or three hundred apple trees on the north side of the Niagara Escarpment in rough, rocky, clay soil, and they are growing well.

We would advise you to dig the holes much larger every way than the roots require, and to fill in with fine, rich, sandy loam. Then under the treatment you propose, you should succeed.

EVAPORATORS.

ANSWERS BY R. JOHNSON, SHORTSVILLE, N. Y.

36. *Are evaporators much used?*

[GEO. MCKEE, Orillia.]

The business of evaporating fruit has assumed such large importance that the highest skill has been exercised to produce the best machines and modes of doing the work.

37. *What is the cost of an evaporator?*

[G. McK.]

We use a Trescott machine, made at Fairport, N. Y., that is very compact, easily worked, and very powerful; also safe as to fire. The four-foot-square machines will do 50 to 60 bushels of black raspberries in 24 hours. Machine costs \$275.

38. *What fruits are profitably evaporated?*

[G. McK.]

Raspberries, black and red, blackberries, apples and peaches.

39. *Canning Factory.—Would a canning factory pay near Orillia, abundance of fruit being grown about the place?*

[G. McK.]

The business requires experience—many fail; is sometimes difficult to dispose of stock; must have local or special markets.

[R. J.]

Commission.—*What is the usual commission allowed for sale of fruits?*

[G. McK.]

Mr. Johnston writes that in New York State, where wholesaled to deal-

ers, the commission is usually 5 per ct. If retailed, 10 per ct. In Canada, most commission houses charge 10 per ct. for wholesaling fruit, and 15 per ct. for retail sales. Perhaps, as the quantity increases, our Canadian houses may be able to lessen their charges.

40. Berry Picker.—*Where can it be purchased?*

Address Mr. J. Benedict, Dundee, N. Y.

The machine will only be useful for gathering fruit for the evaporator. Its work is too rough to be used where the fruit is intended for market.

41. Sea-Kale.—*I should like to grow some Sea-Kale in my garden, knowing the vegetable well in England. Can the plants be got in Canada, and would you give me some hints for its cultivation?*

[MRS. W. TOWNSEND, Toronto.]

Mr. John A. Bruce, Hamilton, says: "Sea-Kale is a delicious vegetable, much superior to Asparagus, and ought to be better known. We used to grow plants for sale, but the demand was so uncertain and limited that we ceased, but we still keep the seed. It should be sowed in hills one foot apart, and thinned to four inches. When one year old the plants should be transplanted into hills eighteen inches apart, and three plants to a hill. On approach of frost, cover about two feet thick with dried leaves. It is fit for use when the stalks are about four inches long and thoroughly blanched."

42. London Purple.—*Is this as dangerous to use as Paris Green?*

[G. E. L., Centerville, N. S.]

No, it is not quite as dangerous a poison, and it is easier of application because soluble in water, while Paris Green is not, the particles of which can only be kept in suspension by frequent stirring. But it is difficult to procure an even grade of London Purple.

43. Ants.—*Should they be destroyed in the orchard.*

A. C. McD., Dunlop.

These industrious little workers are quite harmless. Some people accuse them of bringing the aphides to the cherry trees, but, instead, it is the aphides which attract the ants, by reason the sweet juice they exude. Entomologists tells us that the ants actually milk the aphides for this sweet juice, for which reason, they are called the ant's cows.

44. Phosphates.—*How could raw ground phosphates be obtained in Hamilton, at what rate, and what would be considered a fair dressing per acre for grass, grain, or small fruits?*

J. P. MUIR, Hamilton.

As far as we know, the raw phosphates are not offered for sale in Canada. In Chicago they are offered at \$25 to \$35 per ton. The phosphates of commercial fertiliezers have one advantage over the rock, viz., they are more easily dissolved in the soil water, by reason of the sulphuric acid with which they have been treated.

45. Quart Boxes.—*Can you tell me if there are any berry boxes made in Ontario that will hold a quart? Why do not Canadian manufacturers advertise in the Canadian Horticulturist.*

W. E.

There is a basket factory at Oakville, one at Grimsby and one at Jordan, but do not know that any one of them make the quart size. Perhaps one of the firms will take the hint, and advertise, that we may know what they are doing.

46. Plums.—*What is the average yield per tree?* [G. W. CLINE, Winona, Ont.]

There are many different kinds of plums and each are different in growth and bearing. Lombard and Victoria average about 5 baskets, trees 10 years old; Columbian, 6 to '8; Gen. Hand, 6 to 8; Yellow Egg, about the same; Washington, 5; Golden Gage, 5; Bohemian Prune, 6 to 8; Duanes Purple, 5; Smith's Orleans, 4 or 5; Brad-

shaw, same, or sometimes will run 8 ; Imperial Gage, 4 to 5. There are about 30 or 40 different varieties good to plant, and a good few of no use whatever, except to fill the nurseryman's pocket.

Review.

We will gladly give our candid opinion of any books, magazines or catalogues received, especially if they are likely to interest or benefit Canadian fruit growers, but will not insert cut and dried reading notices in favor of any publication whatever.

The Report of The Michigan Horticultural Society 1886. A magnificent work of 572 pages, compiled by Mr. C. W. Garfield, the indefatigable and energetic Secretary. It is nicely bound in cloth, and contains not only the Society report, but also much of the cream of the discussions at auxiliary as well as National sister societies. The Secretary's Portfolio too is invaluable.

Descriptive List of Greenhouse, Window and Bedding Plants grown and for sale by J. P. Cockburn, Gravenhurst, Ont.

Seed Annual, D. M. Ferry & Co., Windsor, Ont., 1887. A most complete catalogue of both vegetables and flowers.

George Leslie & Son's Illustrated Descriptive Catalogue of Fruit Trees, Ornamental Trees, Shrubs, Roses &c. Leslie P. O. Ont.

Prize Offer. A circular from Fonthill Nurseries offering a first prize of \$50 at Industrial Exhibition Toronto, in fall of 1890 for best three clusters of Moore's Diamond Grape.

ON EMPEROR WILLIAM'S birthday, it is said that one poor woman left at the door of the palace a small bunch of flowers with a petition praying for the pardon of her husband who was in prison. The flowers and the petition were placed in a position where they could attract the Emperor's attention. The petition was granted.

Humorous.

Departing, I had clipped a curl,
That o'er her brow did hang ;
She, smiling said : " You're like a gun,
You go off with a 'bang.' "

At which I pressed her lips and cried :
" For punning you've a knack ;
But now I'm like a fisherman,
I go off with a 'smack.' "

—Wilmington Star.

NOT EVEN A FIG LEAF ON THE TREES.

Mrs. Tootoo—" Now, Charlie, you're really not going to bring Mr. Early home with you at this season of the year ? "

Mr. Tootoo—" Why, of course, dear. Why not ? "

" Because everything looks so bare ! Why, even the limbs of the trees have nothing on them ! "

" That's so ; I never thought of that. But I'll send up some garden hose I saw advertised, and I guess you can make them presentable. "

The wind is always blowing about something, but there is nothing in it.

BROWN : " Hello, Jones ! How's your wife ? " JONES (a little deaf) : " Very blustering and disagreeable this morning. "—*E. S. Agriculturist.*

Old Mr. Bently (reading the paper) —" I see that in a recent storm at sea a ship loaded with passengers went ashore. " Old Mrs. Bently (placidly) —" How fortunate ! I can imagine just how glad those passengers must have been to get on dry land. "

" The car is full of alumni, " whispered Miss Beaconstreet to her friend from the West, as they both journeyed Cambridgeward in the horsecar. " Yes, " said the Chicago girl, " and how it chokes one up, don't it ? I wonder they do not open the ventilators. "

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INDEX TO MAY NUMBER.

FRUITS.....	98-101
Leading White Grapes (Editor), Top-grafting, Grape Experience (W. M. Robson), Fertilizers, Hardy Apples, Peach Yellow.	
SMALL FRUITS.....	101-108
Training the Raspberry (S. Roy), Jewell, Erie, Quart Box, Big Strawberries (J. H. Hale).	
SCIENTIFIC.....	103-106
The Apple Scab (Editor), List of Insecticides.	
FLOWERS.....	106-111
Pansies, Gladiolus (H. Simmers), Garden Lawns (J. A. Bruce), Ornamental Planting, Flowering Begonias (J. P. Cockburn), Marvellous Hyacinth.	
BIOGRAPHICAL.....	111-114
Charles Downing (B. Gott).	
THE CANADIAN HORTICULTURIST.....	114-117
Report of '86, Firming the Soil, Niagara Grape, Farmers' Institutes, Summer Meeting, Letter from Jackman & Sons, Paris Green.	
QUESTION DRAWER.....	117-120
Currant Worms, Trees in Rocky Soil, Evapor- ators, London Purple, Phosphates Plums, &c.	
REVIEW.....	120
HUMOROUS.....	120