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THE CANADIAN HORTICULTURIST.

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VOLUME X.

EDITOR:

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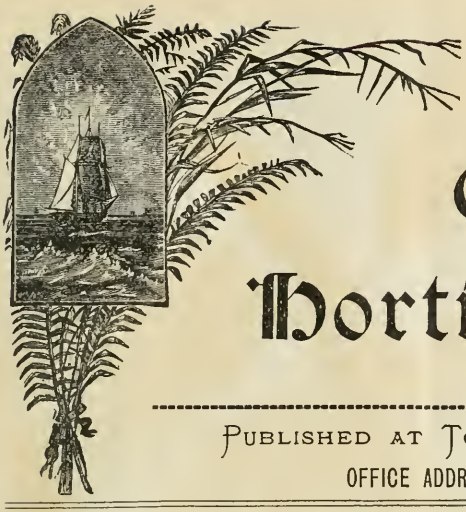

The Canadian Horticulturist.

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Fruits.

THE YELLOW TRANSPARENT.

THE readers of the *Canadian Horticulturist* will be pleased to see a colored plate of an apple that has so much to commend it as the Yellow Transparent. This is not a new and untried fruit, but is proved to be one of the few apples of real excellence which is adapted to the northerly portions of the apple region. It was imported from St. Petersburg, Russia, in the year 1870 and has since that become pretty widely distributed. The merits of this apple may be summed up under the following three heads:

(1) *Hardiness*—In this respect it is fully equal to the Duchess of Oldenburgh, and it is claimed that it will survive temperature of 45° below zero without freezing. It was on account of this quality that the Fruit Growers' Association of Ontario included it in their premium list, and as it bears when quite young we hope soon to have the testimony of our readers in confirmation of its previous reputation.

(2) *Earliness*—Of all our early apples this promises to be the best shipper and the most renumerative. Previous to the ripening of the Red Astracan aad the Duchess of Oldenburgh we have no apple of extraordinary beauty either for the table or market; but in the Yellow Transparent we hope to find the gap worthily filled. No other has such delicate waxen beauty, while in flavor it comes little behind the well-known Early Harvest. It may be gathered any time in August, or be left to hang into the month of September, all the time improving in beauty.

(3) *Freedom from Spot*—And herein lies of its great merits. The

PLAGUE OF THE APPLE SPOT

is spreading through our country. Scientists claim that it is a species of fungus.

They call it *Fusicladium dendriticum*, a mingling of Latin and Greek, evidently meaning "a pest that spreads ruin upon trees," and certainly it is well named. The microscope reveals a miniature forest of plants in each spot, and as each one of these parasites draws its nourishment from the apple the most evil results must necessarily follow.

It is further claimed that the *leaf blight* which was so severe last summer and caused the trees to drop their leaves, is the same species of fungus as that above described which caused the apple spot.

No remedy is yet known, though some of our scientists are now making a study of this subject and will soon make known the result.

So far we only know of one means of checking it, and that is to plant only such varieties as are not subject to the disease. The Early Harvest and the Snow apple, which are breeding the pestilence, should be cut down and burned up; and in future only such varieties should be planted as the Yellow Transparent, the Duchess of Oldenburg the Golden Russet and others, which are free from its ravages.

The following description of the Yellow Transparent apple is from condensed remarks upon the Newer Fruits at the late meeting of the Michigan Horticultural Society: "A most valuable early sort; precedes by some weeks the Early Harvest; of extra good quality, pleasant flavor, beautiful color, waxen yellow; hard wood. A Russian sort sent out seventeen years ago, same as White Astrachan and White Transparent Moscow. Planted extensively in Virginia and the Carolinas for early New York market."

APPLES IN BRITAIN.

BY A. MCD. ALLAN, GODERICH, ONT.

At the first of the season prices for even the most ordinary samples were very high, the buyers being under the impression that the supply would be extremely limited. But as the season progressed prices have gone down until now buyers are very particular, and fruit that four weeks ago would readily bring 20s. to 25s. will not realize 16s. at the best for choice samples now. I luckily sold a number of cargoes "to deliver" and upon these the prices for all kinds are high, but those arriving now I cannot do much with. And I am sorry to say the fruit is mostly mixed in samples, very spotted and wormy.

Many packers, too, I fear, are packing right from the trees instead of allowing the fruit to lie upon the ground for some days first. Tne result is that I find a great deal of wet, mouldy fruit arriving for which only a trifle can be realized. I have had to let go some lots as low as 5s. per barrel for very poor stuff. This ought not to be so and the remedy is in the hands of the shippers, who should be more careful in giving instructions to their packers. Indeed, they should make packers responsible for all poorly culled and packed samples. The various kinds should be packed tight enough to allow for a slight shrinkage. In doing this probably some kinds will need to be pressed more than others as a soft or spongy variety will shrink more than a crisp variety.

Then, again, special engagements should be made with steamship companies so that they should store all away

from the centre of the vessel and the vicinity of the engines. Where apples are spotted I find that the slightest moisture will cause them to mould and rot. There is no use in sending poor samples here as they cost as much in freight as good ones and will only realize ruinous prices, besides gaining a bad name for the shipper and the country. I am convinced that it will pay to put up fine samples in bushel or bushel and a half boxes and wrap each sample in a piece of tissue paper. I find that American apples are generally packed better than Canadian, especially those coming from the Northeastern States and also New York State. It is a grand mistake to think that British buyers wont find small, wormy, spotted apples if we put them in the centre of the barrel. They turn the entire contents out when judging any new or old trade mark or shipper, and woe be to him who is found out this way. Every broker and retail fruiterer present will make a note of him. But the careful, honest man gets due credit and will at any time get a good price. I believe packers are to blame almost invariably and not the shippers. I know from experience how very careless they will become, no matter how careful they may be at the outset. It pays to bind them down with the most stringent rules, and then keep a watch over them by occasionally turning out a barrel to see how it has been filled.

THE COLONIAL AND INDIAN EXHIBITION.

JUST at this time when we are congratulating our worthy President, and his able co-adjutor, Mr. P. C. Dempsey, on their safe return from the Colonial and Indian Exhibition, we are sure our readers will be interested in a glimpse of the Canadian trophy, as shown in wood cut kindly loaned us by the *Farmers' Advocate*, of London.

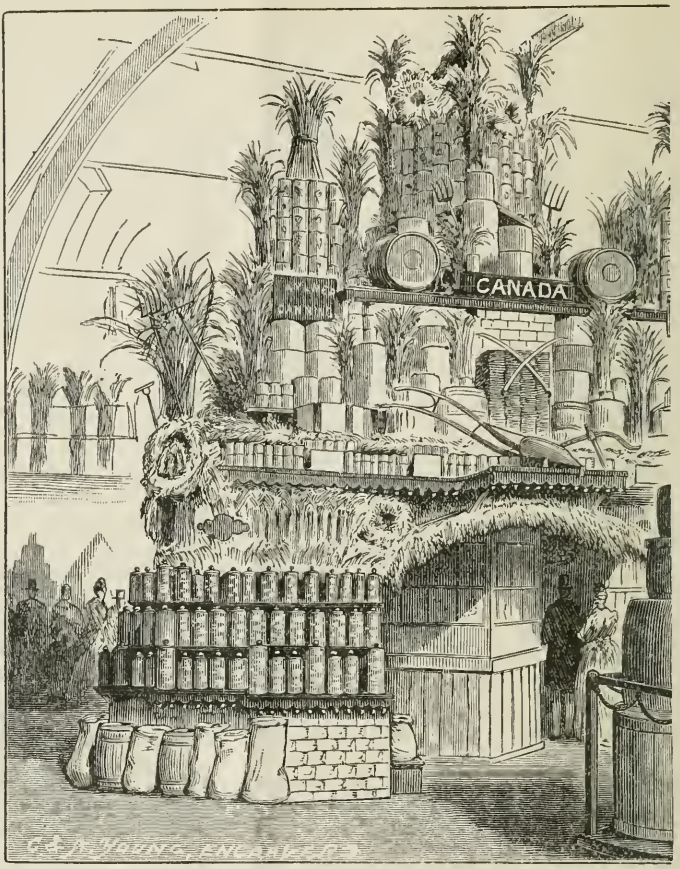
At the bottom you see bags of cereals and specimens of Canadian timbers and minerals. Next above, and around behind, are about 1,000 glass jars containing those samples of apples, pears, peaches, berries, &c., which were so carefully collected by Mr. William Saunders. Above these again are grains, grasses, hops, &c., arranged in the most tasteful fashion.

All this cannot fail to have a good effect in gaining for Canadian fruits a higher appreciation in the Old Country.

The *Horticultural Times* (Eng.) says: —" We learn that Mr. C. R. H. Starr, Commissioner in charge of the Canadian Fruit Department at the late Colonial Exhibition, is making arrangements for the extension of the market for Dominion fruit in the many populous centres that lie beyond the confines of Glasgow, Manchester, Liverpool, and London, and is also endeavoring to open up markets on the Continent. The movement is a good one, though we fear the Continental markets will be difficult to open up. There is plenty of scope, however, for increased consignments in this country of good Canadian fruit. Mr. Starr's efforts in advocating cold storage for shipping Canadian fruit are well known."

The *Canadian Gazette*, London, Eng., says :—" The displays of Canadian apples at Exeter and Edinburgh have aroused no little interest at the Exhibitions in those places. Reports from Exeter state that a most favorable impression was produced by the Canadian apples. The fruit, we are told, 'excelled in color and included some magnificent specimens, all in a fine state of preservation, notwithstanding the double consignment, first to London from Canada, and thence to Exeter.' The mayor in opening the Exhibition called special attention to the Canadian

fruit, pointing out that the importation of apples from Canada had increased from 15,000 barrels in 1874 to 242,144 barrels last year. A friend of his had, he said, transplanted and grown Canadian apples at Great Fulford in this country with great success. The Canadian fruit was, at the close of the show, distributed among the mayor, sheriffs, town clerk, local editors, and officers, all of whom speak most highly of its qualities. A special report is shortly to be made by the judges of the Tasting Committee as to tho flavor and general quality of the fruit."



THE CANADIAN TROPHY.

CANADIAN vs. BRITISH APPLES.

BY A. MCD. ALLAN, GODERICH, ONT.

A test was made in Glasgow by four good apple experts to discover the difference in flavor between our apples and the same kinds grown in Britain. Ribston Pippin, Blenheim Pippin and Cox's Orange Pippin were selected as these are grown in both countries. It was granted at first that Canada had by far the best of it in color and form. The specimens were peeled and submitted, and in every case all four declared positively and readily in favor of those grown in Canada. This only bears out the opinions expressed by thousands whom we met at the Colonial Exhibition. There is no doubt whatever that the form of any of our naturally grown apples is as nearly perfect as it can be, whereas those grown in Britain have to be forced by extra manuring and high cultivation and hence are very knobby and high ribbed. Ours have a tenderness of flesh that we do not find in any of the British apples, and their color is superior to ours in

any we see. But it is most natural to expect fine flavor where we have so fine a color, and it would be unreasonable to think of finding high color where there is no color at all scarcely. The The British atmosphere is too moist to give either color or flavor in its finest as we get it. Without abundance of sunlight and clear pure air such as we have no country can produce such fine samples of apples.

WHITE BLACKBERRIES.

SIR,—Whilst out for a tramp last August I came across a white, or rather yellow, blackberry growing wild on the banks of the Ottawa, the fruit being then ripe on the bush. I removed six suckers, wrapped them up with damp moss and brought them home, carefully marking the spot where they were found, so that should those procured fail to grow—as the season when plants are in fruit is the worst time for their removal—I would be able to obtain other plants at a future time. I would feel much obliged if you would kindly inform me if there are at present any white blackberries in cultivation. I see no reason why there should not be red, white, and black blackberries as well as the above three shades of currants, raspberries, grapes, &c. P. C. BUCKE, Ottawa.

[There are some white blackberries cultivated, such as Col. Wilder and Crystal White, and a red one known as Doctor Warder, but none of them productive enough to be valuable except as curiosities.—ED.]

THE BLACK SPOT ON THE APPLE.

SIR,—Enclosed please find my subscription to *The Canadian Horticulturist*, which I consider very much improved of late.

The *black spots* on the Snow apple is a subject in which we, in this section, are deeply interested. My own opinion is that they are living beings that feed on the juice of the apple. They first attacked the "Snow," the most delicious of apples. They are extending their ravages to other kinds. The winter kinds have hitherto escaped. I was advised by an old fruit dealer to leave them on the tree as long as possible when so attacked. I believe the advice to be good.

Some of my Snows were blown off by the wind this year, and remained in the long grass four or five days. The black spots disappeared very much. I reasoned that the damp and cold were too much, for the insects breed in the sunshine. T. LEWIS, Maitand, Ont.

[NOTE.—The spot on the apple is not an insect. It is a species of fungus.—Ed.]

CLIPPINGS.

THE FRED CLAPP.—Try the Frederick Clapp Pear. The fruit is fine-grained, very juicy, rich and excellent. It ripens in October. Those who want a *showy* pear in place of the great Kieffer, as well as one that may be enjoyed, will be pleased with the F.C. It has not as yet been tried sufficiently to enable us to say where it will succeed.—*R.N.Y.*

AUSTRALIAN FRUIT arrives in England in excellent condition. It is packed in corkdust or sawdust, and placed in a cold compartment, where the temperature is kept as near to 40 degrees as possible.—*Rural New Yorker.*

THE KIEFFER PEAR.—The wife of a prominent fruit grower says that she has noticed that people learn to like the Kieffer Pear. Attracted by its beauty, even though it be to the amateur but skin deep, people continue to taste and eat, until finally they learn to like it very much in the same way as a taste for tomatoes, bananas and other similar

fruits is acquired. Specimens from the same orchard, or from the same tree, differ greatly in flavor. In the Philadelphia market the wholesale condemnation of the fruit, due to its deceptive appearance, has given way to a moderate appreciation, and it brings readily from $1 to $1.50 per basket.—*Rural New Yorker.*

GARDEN CATS.—Attention is being given in England to training cats to protect strawberry beds and other garden treasures from the voracious English sparrow. The cats wear collars, and are tethered by light and strong cords. The tethers are attached to comfortable cat houses which can be moved about from place to place as desirable. It is said a thoroughly trained cat enjoys the life hugely.—*Gardeners' Monthly.*

CARE OF AN APPLE ORCHARD.—The lack of manure and cultivation, and a general lack of proper care for orchards are the causes, in a great part, of their sterility. Neglected orchards produce small quantities of small, poorly-flavored and poorly-ripened fruit. The orchard should be supplied with all the manure the trees can appropriate, and the trees will then be vigorous and will show it by a good growth of wood and handsome fruit. When the trees do not make a free growth of wood it is certain that they are in ill condition and need the assistance of fertilizers and cultivation—probably, also, judicious pruning, cleaning the bark and the destruction of worms and insects.—*Vick's Magazine.*

[We would call especial attention to the above extract. It is worthy of consideration whether the barrenness of orchards in Ontario of late is not in part at least due to causes therein pointed out.]

VITICULTURAL.

THE GRAPE MARKET.—Mr. G. S. Palmer, a New York fruit merchant, is reported in the *Wine and Fruit Grower* as saying that there is no cause for discouragement to grape growers, notwithstanding the extensive vineyards that have been planted.

Immense quantities of grapes are grown along the Hudson river; nearly every farmer for miles back has from one to fifty acres in vineyard, with an average yield of from three to five tons per acre. A similar statement might be made concerning Central New York and parts of Ohio. About Euclid alone, in the latter State, there are about 3,000 acres in grapes, which are mostly sent to Cleveland market, a city which alone consumes 10,000 pounds per day.

Besides these immense qualities grown in the Eastern States, California ships East some 20,000 tons yearly; and nearly one million pounds are annually imported from Malaga and Almeria.

Notwithstanding all this, Mr. Palmer states that the demand in the United States is increasing faster than the supply.

PRUNING THE GRAPE—Mr. G. Arnaud, in the *Monticello Grape Grower*, says:—"Any system of pruning is good which will preserve a good equilibrium between the roots and branches of a vine, will let the vine have a good crop of fine fruit, and at the same time good wood for the next year's pruning."

Dr. Guyot says, and he is truly right:—"Each vine should produce, each year, at least one branch for wood and one for fruiting. The branch for wood should produce each year two sprouts or canes; one to replace the branch which has borne fruit; the other, cut back so as to leave two eyes, will become the branch for wood, and will produce the two shoots necessary for the succeeding year."

Of course if a vine is strong enough, it may have two branches for fruit and

two for wood, or three of each, even four, and the fruiting branches long according to the vigor of the vine.

Another point is to give a good shape to the vine, to distribute well the bearing canes and spurs, to have a good distribution of the fruit, and consequently a good ripening.

Before pruning especially the young vines, the vineyardist must have in mind what shape he wants to give his vines. He has to go over some vineyards and examine what shape suits him best. A good plan is to pay a visit, when he is pruning, to the neighbor who has every year the best crops. This one must have the best system.

About the season of pruning, the Spring is the best; but pruning can be done any time after the complete fall of the leaves, provided the wood is not frozen; or any time during the winter, when the weather is mild.

THE ALICANTE GRAPE.—Mr. P. Barry writes in the *Rural-New-Yorker* that this grape, long known in European collections, is large and handsome, and valued for its free fruiting and good keeping qualities. He has three vines in a cold grapery which never fail to give a heavy crop. The bunches weigh from two to four pounds. The fruit, however, is not more than second quality.

THE WORDEN GRAPE.—There is a good deal of discussion among our exchanges as to whether this grape is really earlier or better in quality than the Concord. Our experience at Grimsby on the south shore of Lake Ontario for two years past is decidedly in its favor in both these respects. We can market it fully a week before our Concords, and we find that when the Concord comes in, dealers still offer one or two cents more for Wordens on account of quality. It does not equal the Concord for quantity.

A NEW ERA IN THE APPLE TRADE.

THIS year may be regarded as the commencement of a new era in the import trade. The exhibitions that now take place annually in London have done much to foster competition between this country and America, but the latest, and perhaps the most successful, of the series—the Indian and Colonial—has given the greatest prominence to matters horticultural. The British colonies are well represented in every department, but in none more so than in the fruit trade.

Route.—This is a question of the utmost importance, and although a London house, we must say that the Liverpool route is by far the best. Shipments made from New York, Boston, Philadelphia, Montreal, or any other ports to Liverpool at a through rate to London reach us in a minimum of time and therefore in better condition than would otherwise be the case, while the direct London route is subject to delay, and an additional objection presents itself in the shape of heavy wharf and lighterage expenses."—*Draper & Son, Convent Garden, London, Eng.*

THE VALUE OF FRUIT AS FOOD.

VERY few people are aware of the value of fruit as an article of food. Many persons look on fruit as a luxury, whilst some shudder at the idea of it, and conjure up internal tortures at the name. Children, on the contrary, will eat fruit at any time, and undergo much discomfort to get it. It is elderly people, or those past their first youth, who cannot eat fruit and enjoy it. Cooked food, highly seasoned meats, and alcoholic liquors have spoiled their taste, and in many instances a ripe strawberry or plum would inconvenience them sadly. But the person who values health, and who knows little of the value of fruit, will make it a point to

eat it daily, and even on occasions to make a meal almost entirely of it. Another cause why ripe and wholesome fruits are given a bad name is because they are eaten at the wrong end of a meal. After many courses of heavy foods and strong drinks a few harmless strawberries are indulged in, and then when these rich foods and stimulating drinks upset the stomach the blame is put on the innocent strawberry.

Many people—a good number of whom are doctors—are of opinion that autumnal diarrhœa is due to frnit. This is an idea not borne out by facts. I inquired into the subject, and found that in every case the diarrhœa was due to meat or fish, but never to fruit alone. The true explanation of autumnal diarrhœa lies in the fact that in hot weather flesh putrifies very quickly, during putrefaction alkaloids called ptomaines are formed; these are emetic and purgative, and give rise to distressing symptoms. These alkaloids are found in meat at all times, but more especially during hot weather.

Fruit has the composition of a perfect food, containing all the substances required by the body. Here is the composition of strawberries:

	Per cent.
Water	87
Sugar	4
Free Acid	1¼
Nitrogen	0¾
Insoluble matter (½ per cent. of which is ash)	7
	100

From this table we can see that fruit is a perfect food, as it contains everything needed, including water.

Were fruits used daily by all there would be less gout, rheumatism, gall stones, stone in the bladder, and calcareous degeneration than there is now. In connection with the curative power of fruit, we must mention the

"GRAPE CURE."

This is practiced in France and Germany in the autumn, and is a cure for many diseases due to high feeding. The patient is given a pound of grapes to eat the first day. This amount is added to until the person can eat five or six pounds a day. The other food is gradually lessened, and the diet at last consists entirely of grapes. It cures obesity and many other complaints, and starts the person off on a new lease of life. Fruit is thus seen to be a necessity in a rational diet, and of immense value in dietetic medicine.—*Vick's Magazine for October.*

NOTES TO NEW BEGINNERS.

BY PETER PRUNING KNIFE.

KNOWING that there are numerous new beginners in fruit culture who are sprouting out with large and erroneous ideas and expectations of amassing a fortune in a few short hours, I have considered it my duty to sharpen up and try and lop off some of the surplus sprouts which, I fear, may overshadow their prospects of success—and perhaps blight their crops:—and if I can let the light of thirty years of experience shine in upon them in any way, even though it may not help to ripen up their fruit, it may save them from some sore disappointments and losses which I have encountered.

ONE GREAT ERROR

among new beginners, especially among those that come out of towns and cities to get rich in fruit growing, is to think that any soil in a fruit-growing section, like Grimsby or Niagara, for instance, will produce fruit; and not a few have bought land in these localities that was much better adapted to growing frogs and making brick than to fruit growing, and after a few years' experience have become disgusted with the business and say it does not pay.

ANOTHER COMMON ERROR

is thinking that there is not much work about fruit growing. Some have an idea that if they stick a few trees and plants in the ground the rain and sunshine will draw out the fruit, and all they have to do is to sit down and wait for it to ripen, and then gather it. My friends, you never had a more erroneous idea growing out of your heads in your life, and you had better let me lop it off. "Eternal vigilance" is not only the price of liberty (as we used to read in our school books), but it is the price of good fruit, and if you expect to keep down Canada thistles and quack grass, and kill the mice, and curculios, and borers, and codlin moths, and canker worms, and a thousand other insect pests, vermin and noxious weeds without a good deal of it, besides brain and muscle, you are mistaken; and if you expect

TO GROW FRUIT IN A FROG POND,

or on hard red or blue clay because it happens to be located in a fruit section, you are doomed to disappointment. Locality is important, but not more so than soil. Diligence and vigilance are necessary to success. Let this be your first lesson. I will give my ideas of varieties, planting, etc., in a future number.

ARRIVALS OF APPLES in Liverpool market to date of Dec. 4 have been 265,938 brls., according to circular from Messrs. Green & Whineray.

Flowers.

WINTER FLOWERING BULBS.

BY HERMANN SIMMERS, ESQ. TORONTO.

AT THIS season of the year, when the time is arriving for bringing all Dutch bulbs to the light, we purpose drawing the attention of the readers of *The Horticulturist* to a few

PRACTICAL HINTS

that will serve as a guide to those who may be unaccustomed to the proper treatment of such bulbs after bringing them from their dark recesses. Many people have oftentimes complained to me personally of the great trouble they generally have of trying to get their bulbs to flower in the neighborhood of Christmas; but allow me to remind the readers of *The Horticulturist* that in order to secure a perfect flower a little more patience must be manifested on their part. They must wait until that season has arrived when the days are getting longer, as at that time we are gradually getting more and more light to force the stems out. We speak more especially of the

DUTCH HYACINTHS,

as the Roman Hyacinths, in all the colors, can be very easily forced for Christmas with a large degree of success, and, being much more rapid growers, it is not necessary to give the same care to them as to the Dutch Hyacinths, or other Dutch bulbs. Another point we might add is, that forcing Dutch Bulbs is simply an artificial mode of growing them in the house, and in order to gain the greater success a few practical hints can be used to advantage at any time by the amateur.

If Hyacinths grown in pots have been in the dark for about nine weeks, they may at any time after this be brought to the light, care being taken not to expose them suddenly, which may easily be avoided by placing them under a table for a few days, until the sprout has changed its color from a yellow to a light green, which is only the chlorophyll of the plant rising into the leaves on being brought to the light. The same care should be observed in Hyacinths that are grown in glasses, with the exception, that when the bulb has filled the glass with roots,

no matter how short a time it may have taken, they can be brought to the light. The Hyacinth at this stage, when grown in pots, should have an application of some plant food preparation, which will greatly strengthen the lower stem and produce good flowers. In case of those grown in glasses, the water should be changed about once every ten days, in order that the water may not become impure, tending greatly to retard the growth of the flower. Polyanthus, Narcissus and Duc van Thol Tulips may

SINGLE TULIPS.

be treated in exactly the same manner as the Hyacinth, as they require about the same time to develop their flowers. Crocus bulbs, being of quicker growth, may be brought to the light in a shorter space of time, but, as regards details of attention, they should have the same care as the Hyacinth.

PRIMROSES.

We have only two native species of this interesting flower, viz., *The Birds' Eye*, or Primula farinosa, which is pale lilac with a yellow eye, and P. Mistassinica, which has a flesh-colored corolla. Both these are found on the shores of our upper lakes.

In England the *Cowslip*, or P. veris, is quite common, and varies under cultivation from straw color to many other hue.

The most widely known and most highly esteemed of the cultivated varieties is the *Chinese Primrose* (P. Sinensis, of which there is a beautiful colored plate in Vol. V. of *The Canadian Horticulturist*, and of which we now give our readers an illustration.

CHINESE PRIMROSE.

It bears a profusion of showy flowers, varying from white to pink, and is one of the most satisfactory of house plants.

P. Cashmeriana, which is offered as one of the premiums to be given our subscribers in the spring of 1887, is quite new in this country. A writer living in Erfurt, Germany, says of it: "Quite hardy; the earliest of all; produces compact umbels of rosy lilac flowers, very beautiful." Mr. Saunders says of it in the Report for 1885, p. 137: "Late in the autumn the plant dies down to a small compact head, from which, as soon as spring opens, a crown of vigorous leaves is pushed, from the centre of which rises one or flower spikes, which soon develop stout stems bearing globular heads of reddish pink flowers with a pale yellow centre."

The seeds of the primrose should be sown in pots of moist loam early in the spring. The pot should be covered with a pane of glass and set by the north window of a moderately warm room. Transplant them as they grow large enough, and keep in a shady place until fall, and then place them in the

window among your house plants. They will furnish a profusion of bloom all winter.

ANOTHER CANADIAN BELLFLOWER.

SIR,—Your mention of the Marsh or Rough-Leaved Bellflower (*C. aparinoides*) in the December issue of your delightful little magazine, reminds me of a rough-leaved little flower that I met with while in the neighborhood of the North Bay of Balsam Lake this summer. The flower, small and almost transparent, was pure white, and the plant small and prone, if not trailing. It grew on the clumpy tussocks of grass and earth that lay on and among the boulders to be found on the "drowned land" caused by the building of the Trent Valley Canal locks some years ago. Like most marsh plants it was very sensitive to change of atmosphere, and I found it impossible to keep it in water even for a few hours, though its hairiness and rigidity gives one an idea of hardiness that would bear change. It is a beautiful thing, the flowers scarcely as large as a pea, and pretty numerous, scattered all over the plant and exactly the shape of the common Hare-bell. Not being a botanist, I did not know whether to consider this plant a Hare-bell or not until I read your interesting little chapter on "The Bell-Flowers," but now I am sure of it, and send you word where it may be found for the sake of others interested as I am in all our wild floral treasures. If it is known I should be glad to hear its specific name.

Toronto, S. A. C.

NORTH WINDOWS FOR PLANTS.—Most plants will do well in west windows, if the conditions are right for them, but north windows are not favorable to the growth of ordinary house plants. Ferns, and many kinds of plants cultivated for their foliage, will, however, succeed in north windows. Many kinds of flowering plants that have been raised elsewhere, and have been brought to the blooming stage, will then flower freely standing in windows with a northern aspect. Among such plants may be mentioned Hyacinth, Tulip, Rose, Fuchsia, Pelargonium, Camellia, Calla, Chinese Primrose, Cineraria, Azalea, Orange, &c.—*Vick's Magazine for October.*

THE FORGET-ME-NOT.

The flower which we now call the "Forget-me-not" (a name which originally appertained to the Speedwell) has become inseparably connected with the flower, borne on the wings of the following poetic legend: A knight and his lady-love, who were on the eve of being united, while strolling on the bank of the blue Danube, saw a spray of these pretty flowers floating on the waters, which seemed ready to carry it away. The affianced bride admired the delicate beauty of the flowers, and regretted their fatal destiny. At this point the lover did not hesitate to plunge into the stream. He soon secured the flowers, but the current was too strong for him, and, as it bore him past his despairing mistress, he flung the fatal flowers on the bank, exclaiming, as he swept to his doom, "*Vergiss mich nicht.*"

"And the lady fair of the knight so true,
Aye remembered his hapless lot:
And she cherished the flower of brilliant hue,
And braided her hair with the blossoms blue,
And she called it Forget-me-not."

IF ROSES are wilted before they can be placed in water, immerse the ends of the stalks in very hot water for a minute or two, and they will regain their pristine freshness.—*Globe.*

A FLORAL SCROLL of white roses and chrysanthemums, with the inscription

"Finis" upon it, which was sent to ex-President Arthur's funeral, and was regarded as the most conspicuous and elegant of all the floral pieces, came from the Chinese Minister.—*Toronto Globe.*

Trees and Shrubs.

SUITABLE TREES FOR THE LAWN.

P. E. BUCKE, OTTAWA.

It appears questionable to many whether trees should be planted in the lawn or not. After all it is perhaps a matter of taste. Where the area is confined and a rage for tennis exists, requiring a neatly-kept plot without interruption for boys or ball, trees are of course inadmissable; but for such people as have grounds sufficiently extensive to be devoted in part to pleasure, and in part to the beautiful, there is nothing more handsome for the eye to rest upon than judiciously selected trees—the word judicious is used advisedly, as the size of the trees selected, when grown, should be in accordance with the area in which it is planted. No one should plant a forest, elm or horse-chestnut, in a seven by nine lot.

Before going further, I would remark that beginners in planting are apt to be too profuse, forgetting that in a few years hence the young sapling will become a spreading oak or an umbrageous pine. In large grounds, clumps of trees are desirable, but in more circumscribed places, single specimens are more ornamental.

Some of the hardier varieties of lawn trees are :—

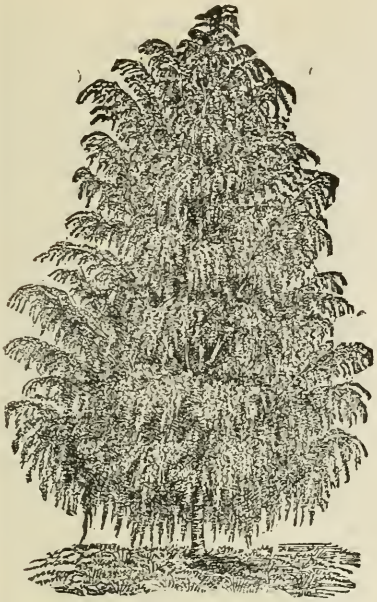
Weir's Cut-Leaved Maple (*Acer Laciniata Weirii*), a weeping, graceful tree. It has been growing on the Parliament grounds here for several years on a very exposed high bluff where the north and east winds have full sweep, but it has never lost a twig; the leaves are very deeply indented, the lower branches bending towards the ground, whilst those at the top of the tree are very erect.

Ash-Leaved Maple (*Acer nequndo*). —There are evidently two varieties of this tree; the one, of Manitoban origin, is perfectly hardy in any part of Canada. It has no resemblance to the maple family in growth, bark, or leaf. It grows freely from seeds, which ripen late in autumn. It does not germinate until next year, whilst the other maples make a small plant the same year in which the seed falls. Its growth is very rapid, its form is irregular and spreading. This tree is being extensively planted in the cities and towns of the North-West. It is very easy of transplanting. When I was in Manitoba three years ago last August I found that large numbers of this tree had been set out in the streets of Brandon. The earth there was high, dry, and gravelly, and though there had been an almost continuous drouth throughout the summer, almost every tree was living. In its natural state it grows along the bottom lands and margins of streams. This tree grows freely from cuttings.

The Tartarian Maple (*Acer Tartaricum*) is of the shrubby growth, and nearly, though not quite so hardy as the nequndo. Its dwarf form makes it more suitable for small grounds.

The Imperial Cut-leaved Alder (*Alnus Imperialis Laciniata*) is also suited for contracted areas. It is also pyramidal shape; its light, feathery foliage, which is deeply cut, and is of a greyish-green colour, makes it very attractive.

The Cut-Leaved Alder (*A Laciniata*) is pretty and vigorous, and is considered one of the best of the Alder tribe.



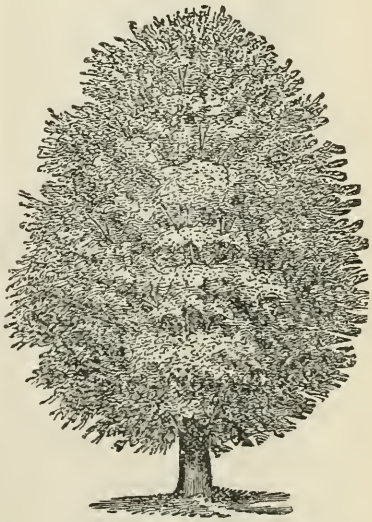
CUT-LEAVED WEEPING BIRCH.

(Betula Laciniata)

Of all the lawn trees in cultivation there is nothing that can compare with this beautiful and graceful tree. When well grown it attains a height of twenty-five or thirty feet; the main stem is very erect; the branches are exceedingly fine and delicate, on which is suspended a wreath of foliage and a rich harvest of green catkins early in the year. The weight of these on the long, slender sprays make the tree look like a very waterfall of verdure. The stem and larger branches are snow white. Scott says of this tree that it is "the acknowledged queen of all the airy grades," and he is quite right."

I fancy there is a difficulty in propagating it, or else there must be a great run on the nurseries for plants. Some few years ago the city of Ottawa required a couple of dozen for its parks and ornamental grounds, but could not get them at any price. I have a very fine specimen on my lawn, and people in passing stop to gaze at it. One friend, seeing how dazzling white the bark was, asked me in all seriousness why I whitewashed that particular tree. I notice that some people who grow them, trim the stem up for eight or ten feet. It is difficult to spoil so beautiful an object, but such a course is down-right cruelty. The lower branches should spring from the stem about three or four feet from the ground; the tree would then make a perfect cone to its apex, the lower sprays sweeping the grass at its feet. The seed of this variety is infertile, so that no seedlings can be obtained from it. There are other forms of Betula that are ornamental, such as the *Purple-Leaved Weeping Birch (Pendula elegans)*, and *Young's Weeping*, the latter very suitable for cemeteries when top-grafted, and *Betula Nana*, a small dwarf tree with many branches and dense foliage.

(Concluded in next number.)



THE HARD MAPLE (*Acer Saccharinum*).

THE MAPLE.

Oh, tenderly deepen the woodland glooms,
And merrily sway the beeches,
Breathe delicately the willow blooms,
And the pines rehearse new speeches ;
The elms toss high till they brush the sky,
Pale catkins the yellow birch launches,
But the tree I love all the greenwood above,
Is the maple of sunny branches.

Let who will sing of the hawthorn in spring,
Or the late-leaved linden in summer ;
There's a word may be for the locust-tree,
That delicate strange new-comer ;
But the maple it grows with the tint of the rose,
When pale are the spring time regions,
And its towers of flame from afar proclaim
The advance of Winter's legions.

And a greener shade there never was made
Than its summer canopy sifted,
And many a day, as beneath it I lay,
Has my memory backward drifted
To a pleasant lane I may not walk again,
Leading over a fresh, green hill,
Where a maple tree stood just clear of the wood—
And, oh, to be near it still !

—*The Varsity.*

THE SOFT OR SILVER MAPLE (*Acer Dasycarpum*).

NOTE ON THE MAPLES.—Everyone knows the Maple, and that in autumn its colored foliage is the glory of our Canadian landscape. But everyone does not know that there are a dozen or more varieties worthy of cultivation in our lawns and parks. There are three Canadian varieties, too well-known to need description, viz : The Hard Maple (*Acer Saccharinun*), a tree so large and compact in its habits of growth that in a small lawn it would hide every prospect and be wholly out of place. The Soft Maple or Silver Maple (*Acer Dasycarpum*), a tree of rapid growth, with slender branches, and foliage silver white beneath, a favorite tree for street planting; and the Red or Swamp Maple (*Acer rubrum*), a most attractive tree in early spring, with its clusters of bright red flowers, which appear before the leaves come out. It is of this variety that Bryant sang :

" When April winds grow soft,
The Maples burst into a flush of scarlet flower."

There are besides several very desirable varieties of Norway and Japan maples worthy of cultivation, a description of which may be seen in Report for 1883, p. 96.

Scientific.

THE CURRANT BORER.

BY D. W. BEADLE. ST. CATHARINES, ONT,

IN THE March Number inquiries were made concerning this insect, especially for some method of combatting this enemy of our currant bushes more in accordance with our wishes than that of cutting away the stalks and thereby destroying the symmetry of our plants. We propose to give our readers a description of these insects, accompanied with cuts, which have been very kindly supplied to us for this purpose by the Entomological Society of Ontario. It is to be hoped that our readers will be enabled to recognize these pests at

sight, and to devise means of lessening their ravages.

OUR NATIVE CURRANT BORER.

is a very small beetle. Figure 1 shows shows it of the natural size at the left hand, and at the right magnified in order to present its markings more clearly. It may be found on the currant bushes early in June, and, being not very active, can be captured, its small size being the greatest obstacle, for by reason of its diminutiveness it escapes detection. From the eggs laid by this beetle small, white, footless grubs are hatched, having brown head and black jaws. These feed upon the pith of the stems, rendering them hollow, as many as half a dozen of them being frequently found in one cane. They remain within the stalk, changing into the chrysalis state without leaving it until, as little brown beetles, they come out in the end of May or beginning of June.

Fig. 1.

THE IMPORTED CURRANT BORER,

for it seems that somehow, as though we had not pests enough of our own, we must needs bring in some more from foreign countries, belongs to quite a different family of insects, as will be seen at a glance at Figure 2. This little moth is of a bluish black color, with three narrow golden bands across the abdomen. The wings are transparent, veined and bordered with black, having a coppery lustre. It may be found among the currant bushes about the middle of June, laying its eggs singly near the buds, from which the larvæ are hatched in a few days. These little worms eat their way into the centre of the cane, spend the summer feeding on the pith, burrowing it out for several inches. Its appearance when full grown is shown in Figure 3 considerably magnified. The head and legs are brown, and there is a dark line along the middle of the back. After it has attained its full growth it eats a passage through the woody part of the stem and the inner bark, leaving only the thin outer layer untouched. It then changes into the chrysalis state—the chrysalis is seen at *a*, Figure 3, magnified. In this condition it remains until about the beginning of June, when the chrysalis, by wriggling itself forward, pushes through the thin outer bark which was left by the worm far enough to allow the moth to break its chrysalis covering and make its escape.

Fig. 2.

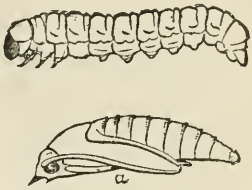


Fig. 3.

This is the life history of these insects, and it discloses but

ONE VERY VULNERABLE POINT,

and that is the fact that they pass the whole of their larval and chrysalis existence within the stem of the currant bush which they have injured, if not totally ruined, by eating out the pith. Inasmuch as it is well for the plant that these hollow canes be removed, it may be that by making thorough work in cutting them away and burning them while the insect is yet within that we may so reduce their number after a year or two as to make their depredations comparatively trifling. However, this involves the abandonment of the single-stem system of pruning, and forces us to train the plants with several stems, which seems to us on the whole

the preferable system in our climate, where heavy snows are so apt to tear off the branches where they are trained tree fashion.

If any prefer to train the currant to a single stem, we would suggest that they try the experiment of painting the entire plant, just before the leaves expand, with soft soap. If the eggs are laid in the soap it will kill them, but if these insects lay their eggs upon the new growth, of course there will be no soap there to do them any harm. Strong alkalies will kill the eggs of very many insects, and soft soap diluted to the consistence of a thick paint by the admixture of a strong solution of caustic soda is an excellent application for such purposes.

BEES AND FRUIT.

BY E. ROBINSON, LONDON SOUTH.

SIR,—I notice in the August number our valuable journal the question asked whether the Honey Bee has any beneficial influence on our fruit crop.

I see Mr. Ott of Arkona has answered the question in an interesting manner, and as I am like him a beekeeper and an amateur fruit grower, I also send you a few facts that may show the great importance of these industrious wonderful little insects.

First, *the perfect fertilization of our fruits without delay is all important either by the wind or by some insect.* Now the wind may fail, or act against the desired end, as Mr. C. Darwin shows, page 73, 74, Origin of Species. "Some holly trees bear only male flowers which have four stamens producing a rather small quantity of pollen, and a rudimentary pistil; other holly trees bear only female flowers, these have a full sized pistil, and four stamens with shrivelled anthers, in which not a grain of pollen can be detected. Having found a female tree exactly sixty yards from a male tree, I put the stamens of twenty flowers, taken from different branches, under the microscope and in all, without exception, there were a few pollen grains, and in some a profusion. As the *wind* had set for *several days from the female* to the *male* tree, the pollen could not thus have been carried.

The weather had been cold and boisterous and therefore not favorable to *bees*, nevertheless every female flower which I examined had been effectually fertilised by the bees, which had flown from flower to flower in search of nectar" (or pollen). So you see in the case of a *reverse wind* the bees may give us a better crop of fruit than we would get without them. The above teaches us that our perfect blossom strawberries (if not wanted) need not be planted every fourth or sixth row with our pistillate varieties, for if the bee can fertilise the holly at a distance of sixty yards why not our strawberries at the same distance?

Secondly, the *bee surpasses all other insects in the amount of pollen used* and in her manner of gathering it. Pollen she must have, and get it she will, if she falls in front of her hive with her load, perished with the cold; for it is one of the principal foods of the larva bee; the brood will fail to mature, starve and die in 24 hours without it (or its substitute) and when once breeding starts in the early spring, the old bees will go out in the cold, wet weather to get it, thousands loosing their lives by cold and never reach home, but still having fertilised thousands of blossoms in their chivalrous attempt to sustain the life of their young. (This is known to beekeepers as spring dwindling). The quantity of pollen used in a good colony is about 30 pounds I believe, as a queen will lay from 70,000 to 100,000 eggs in a season, and it is the principal food of the bee for the first 21 days of existence.

Then *the mode of gathering the pollen is all important* and interesting. The bee is covered with very fine hairs and when she alights on a flower the pollen adheres to the hairs; the bee then takes wing and hovers just above and close to the flower, while she takes the pollen off her body with her fore legs, and packs it on the thighs of her hind legs in little pellets, all the time scattering the pollen over the flower by the rapid motion of her wings. If she cannot pack the pollen (some kinds will not pack) she rolls herself in it. I have seen them come home so completely covered that they could scarcely find the entrance to their hive.

Thirdly, *the complete fertilization of each plant by its own species.*—A bee always collects her load from the same species of blossom whether it is strawberry, raspberry, apple, dandelion or clover, and if the season of one kind is drawing to a close she will come home with half a load of one kind rather than a full load of mixed pollen from many flowers. If a cell in the comb of pollen be cut open in a longitudinal direction it will be found packed in layers of different colors, and a beekeeper can tell what his bees are working on by the color of pollen they are bringing home. Thousands may be seen coming home in the season, some with light yellow, some with orange yellow, some with green and some with white pollen; but always with one color to each bee, thereby insuring a rapid and sure fertilization of a strawberry by a strawberry, a raspberry by a raspberry, &c. I think this of great importance to our strawberry growers, when we consider that our most prolific varieties are pistillate. I notice that Mr. Dempster grows the Crescent and that he keeps bees, perhaps they have something to do with his large crop of 6,000 quarts per acre.

A few more facts from that great naturalist, Charles Darwin, page 37, Origin of Species. 20 heads of Dutch Clover fertilised by the bees yielded 2,290 seeds, 20 heads protected from them produced not one. Again, 100 heads of Red Clover produced 2,700 seeds, same protected from bees produced not a single seed! Now, a good colony will number 50,000 bees and will consume in the year about 80 pounds, and give to the beekeeper about 100 pounds of ripe honey. And as ripe honey is at least double the weight of honey fresh and thin from the flowers, the bees must bring home at least 360 pounds; add to this 30 pounds of pollen and 10 pounds of water and we have the total of 400 pounds; and as the bee carries about $\frac{1}{4}$ grain troy each trip, we have the large number of 9,216,000 journeys made by a good colony of bees. How many flowers must they visit and fertilise for the benefit of fruit growers!

Last but not least, *What kind of bees are best for the fruit grower?* It is the Italian, because they are more energetic, the queens are more prolific, and consequently they need more pollen and food; and they will venture out to get it when the common black bee, would not show itself. And as it is in the spring that the fruit grower needs the assistance of the bee, the Italian is the one, for it will be out sunshine or shower. Prof. Cook of Lansing, Mich., says: "On May 7th, 1877, I walked less than half a mile and counted 65 Italian bees gathering pollen from dandelions, and only two black bees."

Young boys' stomachs are always in apple-pie order—*Rochester Post-Express*

A Man who was not of much account himself was forever boasting of his ancestry. A plain farmer, tired of this nonsense, asked him why his family were like a hill of potatoes. He gave it up. "Why," said the farmer, "the best part of them are under ground." —*R. N. Y.*

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 premium plants and trees.

New Fruits.—The Editor of this journal will be glad to receive descriptions of new and desirable fruits or flowers, from every part of the country, accompanied as far as possible by samples of the same. Also, having one of the largest fruit farms in Canada he will be pleased to test any new plants or vines sent him for that purpose, and give the result through the pages of *The Canadian Horticulturist.*

Window Gardening.—A writer in the *Maryland Farmer* says that rooms are generally kept too warm for house plants. A temperature of 50° is high enough for Azaleas, Callas, Cinerarias, Carnations, Cyclamens, Ferns, Fuchsias, Geraniums, Holland Bulbs, Ivies, Roses, &c.; while 65° is the proper temperature for such plants as Begonias, Bouvardias, Caladuims, Coleus, Tropical Ferns, Heliotropes, &c. Another cause of failure is too frequent watering. This should be done seldom, and when done a good generous soaking be given, so that the water will go through the pots. Once or twice a week would be often enough to repeat this operation.

Shrubs for Side of House—The *Rural-New-Yorker* says that few desirable shrubs succeed very close to the house, and recommends the Upright or Bush Honeysuckles as the best for this purpose. Their flowers are fragrant and their leaves remain fresh and green till nearly January. We would add for this purpose the Mock Orange or Syringa (Philadelphia Coronarius). This shrub belongs to the Hydrangea family, and will grow and thrive vigorously close to the house, and under its very eaves. Nothing is more beautiful than its full clusters of creamy white odorous flowers.

Pansies.—The *Gardeners' Monthly* tells us that the Pansy become a florists' flower about fifty years ago. At this time every new variety was given a name, just as the roses are now named. The first named Pansy was Lord Gambier and the second George IV. New kinds are now produced too easily to receive names. We had some exceedingly large ones this year in a shady spot. One that we measured was 2½ inches by three inches across the Corolla.

Reports of the Montreal Horticultural Society may be had at the winter meeting.

Wilson Strawberry.—Mr. Morden of Niagara Falls, South, writes: "We find that the Wilson has about given up the idea of running, which is of course a bad point. Crescent, Captain Jack and Manchester do very well in this respect." We read in an exchange that the Jewell is faulty in this particular. Can anyone tell us his experience?

Pioneer Fruit Picker.—Mr. Burgess writes: "I think if Madam Eve, or Mrs. Adam, had used the Pioneer Fruit Picker it would have saved her some trouble, as I understand it was only *choice specimens* she used, and not the general crop."

Clean Manure!!—The *New Farm* makes the following extract from the *R. N. Y.*: "The cold well water which we are apt to look upon as the purest of all drink, is fairly reeking with disease germs . . imperceptible to the taste or smell. . . The ordinary farm vault is a veritable plague spot," &c.; and then adds: "If these disease germs are conveyed into vegetables instead of into water, is the case any the better? and yet the garden is fertilized by the same material which poisons the water without imparting 'taste or smell.' We believe in using clean fertilizers on crops for human food." Our exchange would deprive our gardeners of the most valuable manure they can possibly use by this curious statement. Who ever heard of garden vegetables taking up from the soil any disease germs or other elements foreign to their natural constitution?

A Toronto Lady writes: "Allow me to express my pleasure and sense of the usefulness of such information concerning the cultivation of window and other desirable plants, as Mr. Hermann Simmers gives of the Easter Lily in the December issue. Florists do themselves great injury, both in guarding their methods of growing popular flowers, and in sneering at, or writing over the heads of amateurs, as is too frequently done. The more flowers we are successful in growing, the more we shall buy."

Fugimation for Aphides.—Eben Rexford writes in the *Orchard and Garden* that he has found nothing so satisfactory for ridding the greenhouse of plant lice as fumes of tobacco. Kerosene emulsion, tobacco soap, tobacco water, all effectual enough and suitable for outdoor use, are too dirty to be used inside. The plants should be well sprinkled first, and a dense smoke left in over night, then the death of the aphis is certain.

PROTECT THE BIRDS.

A SOCIETY has been formed in New York City for the protection of birds. It is called the Audubon Society in honor John James Audubon, the great American naturalist, and it originates in a desire to put a stop to the wholesale destruction of our useful and ornamental birds, which just now threatens to rob our yards and forests of a great portion of their charms.

This savage butchery of birds for uses of ornament and fashion is now carried to an extent that most thoughtless devotee of fashion, were the facts once laid before her. We say her, because it is kind, sympathetic, compassionate woman who shrinks from brutality, and is naturally the champion of the beautiful in nature; it is she, we say, who encourages this murderous business.

Here are a few figures to startle the most thoughtless, selected from the Society's circular:

"Although it is impossible to get at the exact number of birds killed each year, some figures have been published which give an idea of what the slaughter must be. We know that a single local taxerdimist handles 30,000 bird skins in one year; that a single collector brought back from a three months' trip 11,000 skins; that from one small district on Long Island about 70,000 birds were brought to New York in four months' time. In New York one firm had on hand February 1, 1886, 200,000 skins. The supply is not limited by domestic consump-

tion. American bird skins are sent abroad. The great European markets draw their supplies from all over the world. In London there were sold in three months from one auction room, 404,464 West Indian and Brazilian bird skins, and 356,389 East Indian birds. In Paris 100,000 African birds have been sold by one dealer in one year. One New York firm recently had a contract to supply 40,000 skins of American birds to one Paris firm. These figures tell their own story—but it is a story which might be known even without them; we may read it plainly enough in the silent hedges, once vocal with the morning songs of birds, and in the deserted fields where once bright plumage flashed in the sunlight."

As horticulturists, it is our duty to work in harmony with such a society as this, for most birds are our friends and very few are our enemies. If only our lady friends would content themselves with wearing English sparrows as decorations for their hats and bonnets, we could pass it by; but no, the useful and the beautiful birds are chosen without regard to anything but the dictates of Madam Fashion.

A careful count was made of the number of visits made by the parent Martins to their nest in a single day, and it was found to amount to three hundred and twelve, and each time bringing insects for their young! Already these insects nearly ruin our fruit crop; and who can predict the result if we are deprived of the friendly aid of the birds?

The following three objects are included in the pledges signed by the members of the Society, viz., to prevent as far as possible:

"(1) The killing of any wild bird not used for food.

"(2) The taking or destroying of the eggs or nests of any wild birds.

"(3) The wearing of the feathers of wild birds. Ostrich feathers, whether from wild or tame birds, and those of domestic fowls, are specially exempted.

"The Audubon Society aims especially to preserve those birds which are now practically without protection. Our game birds are already protected by law, and in large measure by public sentiment, and their care may be left to the sportsman. The great aim of the Society is the protection of non-game birds."

Anyone wishing to join this Society may address it at 40 Park Row, New York City; its work has our heartiest approval.

Still Wanted.—More copies of January, April, August and October numbers of year 1886.

A Stock of Sample Copies of back numbers of the *Canadian Horticulturist* sent free to any one who will distribute them with the object of enlarging the circulation of this journal and of increasing the membership of the Fruit Growers' Association.

Michigan Horticultural Society.—Mr. Garfield has sent us the local report of this interesting meeting, held 1st December last, and we hope to find room for some extracts in our February Number.

Appreciative.—Mr. Allan Chapman, Deans, writes: "The *Canadian Horticulturist* is a little book that is always welcome here. It is so plain and practical that the most unexperienced can always learn something from its pages."

Mr. A. Walker, Metcalfe: "I am much pleased with the *Canadian Horticulturist.* This is a very cold part of Ontario, and if the Vladimir cherry succeeds here we shall be very thankful to the Fruit Growers' Association."

A. J. Collins, Listowel: "I am better pleased each year with what I receive as to information and presents."

These are but samples of expressions in the dozens of letters pouring into our office every day.

A Correction.—Mr. John Croil, Aultsville, writes: "I am requested by Mr. Beall to correct an error which, quite unintentionally, appeared in my letter in your December Number. I gave Mr. Beall credit for raising 1,600 quarts of strawberries on one-eighth of an acre. Give the honest man only his due. He claims only 800 quarts. *Half as honest* I'll try to be, and acknowledge to be far behind him, even at these figures.

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 will henceforth be numbered, and any one replying or referring to any question will please mention the number of it.

1. Treatment of an Apple Orchard.—*Is top dressing with stable manure, commercial fertilizer sufficient for an apple orchard in grass; or would it be better cultivated? The orchard is fifteen years old. My neighbor thinks that the injury done by the plough to the roots and branches will not be compensated by the benefits of cultivation.*

R. Brodie, St. Henry, Montreal.

If an apple orchard has been properly cultivated and cared for until it is fifteen years old, so that it is now in a thrifty condition of growth, it will be far better seeded down, and treated with an annual top dressing of manure. But if it has been neglected and consequently stunted in growth, it may need the stimulating effect of high cultivation for a year or two in order to bring it into a healthy condition. The greatest care is always necessary to avoid either scraping the trunk and limbs with harness, or cutting off the numerous far spreading roots by ploughing too deeply. Ploughing an orchard is an evil, but sometimes unavoidable.

2. Buckthorn Hedge.—*Will cows browse a buckthorn hedge?*

Mr. W. E. Wellington, of Toronto, says: "I think they will browse the new growth before it hardens. After the hedge has age, or the wood has ripened up well, they cannot injure it; but unless protected when it is young, and making succulent growth, cattle would be very apt to nip it just as they do the Honey Locust."

REPLIES TO PREVIOUS QUESTIONS.

6 (Vol. IX). Apples for Napanee.—I take great pleasure in reading the *Canadian Horticulturist*, and recommend it to my friends. I am surprised that you recommend Alexander as a winter apple for Napanee. It is a fine showy apple with us, some specimens measuring 16 inches in circumference; but it is not a winter apple by any means. But I have a kind, a new Russian, called Wolf River, not so large as the Alexander, a better keeper, and a heavier bearer, I would recommend Ben Davis before Walbridge; it stood the past winter very well with us, along side of Wealthy and other hardy sorts. I had the Yellow Transparent ripe on the 28th July, but it required near market.

R. Brodie, St. Henry, Montreal.

Note by Editor.—The Alexander is not a winter apple; but in giving a list to cover the season, we placed it between the Duchess of Oldenburgh and the Wealthy. Will it not keep till December grown as far north as Montreal?

12 (Vol. IX.). Grapes for Orillia.—Mr. Wm. Graham, in the last Report of the Montreal Horticultural Society, recommends the following list for northerly latitudes, viz.: Delaware, Concord, Rogers' 9, 15 and 19, as being thoroughly

reliable varieties. He much regrets that the Champion has been so largely planted about Montreal, as it has no merit beside earliness.

Mr. Thos. Beall, Lindsay, writes: "The reply to question 12 seems to convey the idea that Orillia is not suited to the cultivation of grapes generally. The climate and soil about that town is well suited the cultivation of any varieties that ripen with or soon after the Concord. You would see at their annual Fair such samples of well grown and well matured grapes as you would find some difficulty in excelling even in Grimsby." Mr. Beall should have named the five grapes which he would recommend for Orillia.

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.

BOOKS.

How to Grow Strawberries, by Geo. R. Knapp, Greenfield, Mass., price 25 cts. This is a most useful little book of fifty-four pages, and should be in the hands of every strawberry grower. It deals, in a most able manner, with every detail of strawberry growing, from setting the plants to marketing the fruit. Under the head cultivation, Mr. Knapp urges the *importance of cultivation after the fruiting season* and of continuing it to freezing weather. Most strawberry growers neglect their beds at this time of the year, and we believe thereby make a great mistake. The buds for the coming season's fruit crop are formed in the late summer, and every stroke of the hoe, and every round with the cultivator, adds to the number of quarts of fruit that will be harvested the following season.

Mr. Knapp's estimate of an *average profit* of $600 per acre is altogether too high for us in Canada, whatever it may be for growers in the vicinity of New York City. Ten thousand quarts to an acre, at an average of 10 cts. per quart, continued for three successive years, looks fine on paper, but how many of our Canadian growers, we would like to know, ever get anything like half that quantity, or half that price, on an average in field culture.

We object decidedly to the practice among our fruit growers, especially those who have plants to sell, of setting forth the brightest and fairest side of their business in such a manner as to lead unexperienced persons to embark in a strange business to their great chagrin and financial embarrassment. It is high time that some of the failures of fruit growers were made prominent enough to warn over-zealous enthusiasts that the fruit business needs as much brain and muscle for success as any other industry, and a good deal more patience.

Mr. Knapp's book treats also of insect enemies and diseases of the Strawberry, with a description of all best varities of strawberries that have been tested. On the whole we highly commend it.

How to Propagate and Grow Fruit, by Charles Green, Rochester, N. Y., price 50 cts., is another of those books which contain a great amount of valuable information in a small compass.

Annual Report *of the Board of Regents of the Smithsonian Institution*, Washington, D.C., in two large volumes, one of which is devoted to the Smithsonian Institution proper, and the other to the U.S. National Museum.

PAMPHLETS AND MAGAZINES.

Agricultural Returns to the Bureau of Industries, Nov. 6, '86, A. Blue, Secretary.—This includes a full Report

concerning Fruit and Fruit Trees in Ontario for the season just passed.

Arthur's Home Magazine, published by T. S. Arthur & Son, 920 Walnut street, Philadelphia. January number is full of interest and well illustrated. Its high moral tone makes it a desirable visitor to the family circle.

CATALOGUES.

Official Catalogue of the Canadian Section of the Colonial and Indian Exhibition, received with the compliments of Sir Charles Tupper.

Greenhouse Heating Apparatus.—Hitchings & Co., 233 Mercer street, New York City.

Landreth's Seed Catalogue, 1887.—D. Landreth & Sons, Box 1623, Philadelphia, Penn.

D. W. Beadle Nursery Co., St. Catharines, Ont., neatly got up and contains an interesting descriptive list of trees, shrubs and plants for sale at these nurseries.

Scraps of Fun.

A Boston Dude was making an evening call upon a Beacon street young lady last week, and among the many subjeets which came up for intelligent discussion was the chrysanthemum show.

"Have you visited the chrysanthemum exhibition yet?" asked the young lady.

"Oh, dear, no," he said, "I find such things very trying, y' know; I am not what you call a literary man at all, and such performances are a boah, y' know."

"It doesn't require a very pronounced literary taste to appreciate a chrysanthemum show," said the young woman with a tired glance at the clock.

"No? Well, perhaps not so much a literary taste, y' know, as a fondness for—for—the antique—the ancient—the—the classical, y' know," replied the slim, trying to hide his feet.

"I do not see that the 'antique,' the 'ancient,' or the 'classical,' as you are pleased to call it, has any particular connection with such a display."

"Well, possibly not very much y' know," he assented, knocking a piece of bric-a-brac off the table; "it all depends on how one looks at those things, y' know. By the way," he continued, "who is it that plays the part of Chrysanthemum?"

"You seem to be laboring under some mistake," replied the young lady politely. "It is not a play, simply an exhibition of flowers bearing that name."

"Bah," said the slim, "I had obtained the idea that it was something of the nature of a Greek tragedy, y' know."

A little later he bade her good evening, and while on his way home a gust of wind blew him against a lamp-post and killed him.—*Philadelphia Call.*

Indefinite Quantities.—A barrel of apples, a quart of strawberries, a basket of peaches, a box of cranberries, a box of huckleberries, a quarter's worth of eggs, a dozen eggs.—*R. N. Y.*

Not Exactly Tobacco.—A young lady from the city was visiting a farmer who had a very extensive tobacco plantation. The farmer had gotten out the buggy and was showing her over the place.

"Oh," she said as they turned into the lane, "that is another field of tobacco, isn't it?"

The farmer looked in the direction indicated and replied: "That there? No, marm—er—that—is—not exactly."

"'Not exactly.' What do you mean by that?"

"Why, ye see," said the farmer, with a significant grin: "That there's a cabbage patch."—*Ohio Farmer.*

To Be Shaken Before Taken.—The apple on a lofty bough.—*New Age.*

Notices.

THE WINTER MEETING

of the Fruit Growers Association of Ontario will be held at Chatham, Ont., on the second Wednesday and Thursday in February, 1887, at 10 a.m.

Among the subjects proposed for discussion in the

DAY MEETINGS

are the following, subject to revisal :

(1) *State of Fruit Culture* in the County of Kent, kinds grown, quantity shipped, &c.

(2) *Plums*—Best modes of destroying the Curculio. Is any variety Curculio proof ?

(3) *The Apple Spot :* On what varieties has it appeared ? What varieties are wholly free from it ? When a tree is once subject to it, does it ever recover ?

(4) *Fungicides and insecticides.*

(5) *Are Apple Orchards Profitable ?* What is the average crop per acre ? Cause of their barrenness in some parts of Ontario. Reinvigorating old orchards.

(6) *Value of Apples* for feeding stock.

(7) *Russian Fruits* — Which ones have been proved of decided value for our Northern Sections ?

(8) *Apples and Pears*—Six kinds of each best for (a) home use, (b) market.

(9) *Grapes*—Is there danger of overstocking the market. The best new varieties.

(10) Methods of Planting, Cultivating and Pruning Small Fruit Plants.

(11) *The Aphis* on the Cherry leaves. Extent of the plague. Best means of checking it.

(12) *Commercial Fertilizers* for Garden and Orchard.

(13) Huckleberries for the Garden.

(14) Points to be observed in judging fruits.

(15) *The Fruit Garden for Home Uses*—What to plant and how ?

It is proposed to devote the

EVENING SESSION

to addresses and discussions on such subjects of general interest as the following :

(1) *The Canadian Fruit Exhibit* in London, Eng., and Prospects of the English Market for Canadian Fruts.

(2) *Horticultural Life in England.*

(3) *Chrysanthemums*—How to grow.

(4) *Roses*—The best novelties. Are any of them decided acquisitions ?

(5) *Flowering Shrubs* for the lawn and how to group them. Latest introductions.

It is desirable to have a

SHOW OF FRUIT

in connection with the meeting, especially of any new or desirable kinds. Anything sent for this purpose at the proper time to the Secretary at Chatham will have express charges paid by the Association.

We hope to be favored with visits from

DELEGATES

from other Societies. Mr. Charles Garfield writes that Pres. P. P. Lyon of South Haven will represent the Michigan Horticultural Society.

There will be a *question box* on the Secretary's table to be opened at intervals.

PREMIUMS.

The premiums to be distributed among the members of Fruit Growers' Association of Ontario in the spring of 1887 are the following :—(1) Tree of Vladimir cherry, (2) Dahlia, (3) two plants of Hilborn raspberry, (4) a one-year-old Niagara grape vine, (5) a new single-flowered Geranium, (6) three packages of Flower Seeds—Primula Cashmeriana, and others. Every subscriber should make his choice when sending in his subscription.

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JESSIE STRAWBERRY.

A SEEDLING OF SHARPLESS, OFTEN MEASURING NINE INCHES AROUND. FEW SMALL BERRIES. NO LEAF BLIGHT. REMARKABLE FOR QUALITY, BEAUTY AND PRODUCTIVENESS.

The Canadian Horticulturist.

PUBLISHED AT TORONTO AND GRIMSBY, ONT.

OFFICE ADDRESS—GRIMSBY, ONT.

VOL. X.] FEBRUARY, 1887. [No. 2.

New Fruits.

THE JESSIE STRAWBERRY.

This is a very pretentious strawberry. It claims to be just the very berry that everybody wants. We want a berry of excellent quality, and we are assured that in quality it surpasses the Atlantic or the Prince of Berries! We want a large berry, and they tell us that it is one of the largest, that thirteen selected ones or thirty ordinary sized ones will fill a quart, and that some of the berries measure eight or nine inches in circumference! We want a productive berry, and we are told that it is twice as productive as the Sharpless; indeed, some of our American friends would have us believe that it will produce from 6,000 to 18,000 quarts per acre! But we Canadians are too slow-going in our notions to swallow that statement whole.

The originator of the Jessie is Mr. F. W. Loudon, of Janesville, Wisconsin, and before purchasing the colored plates for our journal we wrote to him and others to get as reliable information as possible concerning its merits. We give Mr. Loudon's reply in full, leaving our readers to form their own conclusions.

"SIR,—Yours of the 20th November to hand, and in reply I will say that you may believe me when I tell you the Jessie is no humbug. It will prove just as I represented it in any part of the earth where the strawberry is known. It is an immense grower. To-day (Nov. 23) I have dug 2,000 plants that were not in existence till after the 21st of August. Nine-tenths of the plants were extra large, and the size of the berry and yield is in keeping with the growth of the plant. I counted 120 roots on one plant, and of the lot none ran lower than 70 to a plant.

"The Jessie originated in 1880; it has fruited five seasons, always giving

the same results—an immense yield. The lithograph was made from a painting copied from nature, the exact size of berries that grew in matted rows, picked from plants that had once been gone over by pickers. The strawberry beds had not had a drop of rain for six weeks. The ground was so hard that a hoe would make no impression. The yield on four matted rows was two hundred bushels per acre.

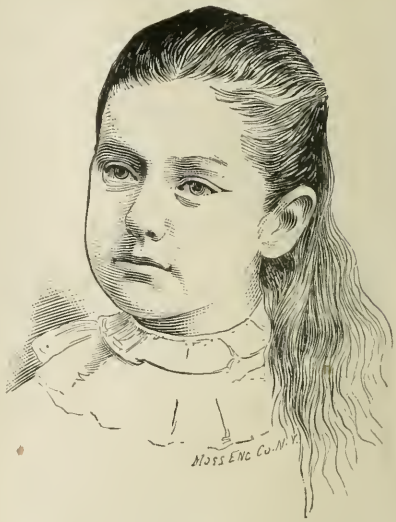
"I am well pleased with the *Canadian Horticulturist.* I did not suppose so good a one was published in Ontario."

F. W. LOUDON.

Mr. John Little of Granton, Ont., is well known among us as a strawberry grower. He went visiting among American fruit growers last summer, and was carried away with the merits of two new seedling strawberries he saw in fruit in Ohio. But he came back safely, though not yet willing to disbelieve the evidences of his senses. He writes "I saw the Jessie in all its glory at Matthew Crawford's place. I I believe it and the *Itasca* are the leaders of the best strawberries of today" and again "I hope you will speak well of the Itasca, it is worthy."

Altogether it would appear that the Jessie is worthy of extended trial, and, if it bears out its present promise, we shall be thankful to Mr. Loudon for the result of his years of patient effort in growing seedlings.

Having been favored with a cut of Miss Jessie Loudon, after whom the strawberry is named, we give it a place in our columns, presuming that as the young lady is not yet in the market, this notice of her cannot be taken in the light of an advertisement.



JESSIE, AFTER WHOM THE NEW STRAWBERRY IS NAMED.

Fruits.

RAMBLES AMONG FRUIT GROWERS.—I.

Noticing the name of

MR. S. BURNER

quite prominent as a winner of prizes in grapes both at Toronto and Hamilton Fairs last September, we thought it would be worth while to visit him and enquire by what secret he had succeeded in producing such wonderful out-door grapes.

We found his garden in the eastern suburbs of Hamilton. Walking in from the front gate it was evident we were in the grounds of a practical gardener. The well kept rows of Downing gooseberry bushes told of an abundant harvest. The long, highly cultivated and beautifully trained rows of grape vines, still (Sept. 29th.) hanging with rich clusters of red, white, and black grapes, spoke of a profitable vineyard.

MR. BURNER'S MODE OF TRAINING.

Ah! here is Mr. Burner, busy gathering those fine Rogers 44.

Would you mind, Sir, telling me the secret of your great success in producing such immense grapes as those you exhibited at the Fairs?

No secret at all, said Mr. Burner. There are just a few points to the observance of which I attribute my success; first

TRAINING.

I follow the renewal system. I see a good many of my neighbors still spurring away, but I believe I get more and better fruit by this system. In the spring I cut down every old branch to within one bud of the main lateral, leaving the upright of last season's growth for fruiting.

We noticed these old laterals had now become very large and strong, and throughout the whole vineyard the vines looked as represented in the cut.

Another advantage, said Mr. Burner, which I get by this method of pruning, is the ease with which I can lay down the vines in winter and cover them.

Do you think it pays in this section to lay down such varieties as the Concord?

Well, I know this, that I can't afford to leave them up.

Do you summer Prune?

Yes, a little. I stop the growth of the vine just beyond the last bunch of grapes, and thus stop the side shoots after one or two leaves. I find two advantages from this; (1) the grapes ripen earlier and (2) the size is much increased. The next point is

THINNING.

No wonder some people's grapes never ripen. They leave so many bunches on the vine, that it has no strength to mature its fruit.

Those berries of Rogers 44 are tremendous in size; why they are over an inch in diameter! and those No. 15 and No 19 are almost as large.

Yes, that brings me to speak of another means I use to get fine sized fruit It is

RINGING THE VINES.

It was at one time considered a great secret, but it is a very simple matter. I simply girdle the bearing wood in the summer, just above the main lateral taking off a circle of bark about two inches long. The sap is thus prevented from descending, and must go to develop the grapes. It does the vine no harm, because these are the branches

which I would cut off the following spring in any case.

But is it not a tedious job to be done in a large vineyard?

Not at all. Why a man can ring an acre in a day. A rich man can afford to leave his vineyard without ringing, but I can't afford to do so. I find my grapes from vines that are ringed bring me twice as much money in Toronto market as those not ringed. They may perhaps not be quite as good in flavour, but people do not stop to consider that. Anyway the difference in taste is very slight.

What means do you use to keep off the mildew?

Nothing but Sulphur. I apply it as soon as I see the first appearance of mildew, and usually find it effectual in preventing it.

Which are your favorite varieties?

The Rogers' Hybrids. I prefer Rogers' 43 to Moore's Early, it bears more heavily with me, and the bunches are twice the size. The Brighton mildews with me worse than Rogers, but its quality is certainly excellent, and it is an enormous bearer. August Giant, in my opinion, is not equal to Rogers 43 or 44. It is too small. Iona does not ripen with me; but Prentiss is excellent, it is a good bearer, and in point of flavor I consider it better than the Niagara.

VITICULTURAL.

Best Varieties.—Mr. E. D. Smith says in the *Live Stock Journal* that only varieties of prime quality should be planted. No one wants Champions in any quantity. His Worden and Moore's Early came into the market with Pelee island Concords and brought 6 cents while the latter sold at 3c. His Niagara sold at 2½ times his Concords and he thinks that it will some day be *the* grape for export. Our own experience agrees with him in placing Moore's Early, Worden and Concord as the three leading dark grapes for Canada.

Plaster for the Vineyard.—The grape vine is greatly benefited by an occasional application of plaster (sulphate of lime). It requires some sulphur and likes lime.—*Orchard and Garden.*

Training Grape Vines.—Mr. Geo. W. Campbell writes in the *Ohio Farmer*: "The matter of winter protection has become so important in many sections, that when the horizontal arm is employed, I would first plant the vine in slanting position along the line of the lower wire, and then train but *one* arm, of double length, in the same direction, letting each vine follow the same way, touching, or nearly touching its neighbor, and the fruit-bearing shoots all trained upward, to be renewed annually upon the short spur or Fuller method. I think this would render practicable the laying down for protection, and greatly reduce the labor of so doing."

SMALL FRUIT NOTES.

Profits.—J. H. Hale writes in *Farm and Home*: "With all the advantages of good markets, none of us are getting rich out of the business. Some are only just making a living, while others are losing money and fast becoming discouraged with the low prices that have ruled the past few years. We hear all about the one successful cultivator who succeeds in producing 6,000 or 8,000 quarts of strawberries or 4,000 or 5,000 of raspberries per acre, and sells them at 15c or 20c per quart, while nothing is said of the "ninety and nine just men" and fruit growers who get only 1,500 to 2,000 quarts per acre and sell them at 5c or 6c." We are of the opinion that a little of this plain and honest talk will hurt nobody.

FAY'S VS. CHERRY CURRANT.—Peter Fay says in the same journal: "For two years I have grown Fay's Prolific currant. The fruit stem is four to five inches long, commencing of a good size at the stalk, but diminishing toward the end of the stem, which is not larger than duck shot. I prefer the Cherry currant at the same price; it is a great bearer."

Dr. Hoskins, however, prefers the Fays. Probably his soil is different. He says: "At last we have a big currant that will bear heavy crops on light land. I have never been able to make a cent by growing the Versailles or the Cherry currant, they are so very unproductive on my soil. I have now had the Fay four years, and find them yielding as heavily as the reliable old Red Dutch. As the currant crop is quite an item in my farming, I consider that I have in the Fay a bonanza, as I had confidence in them from the first, and have made a large plantation of them."

With us at Grimsby the Cherry has been a great favorite, especially on clay loam, where no better cropper could be desired, and the fruit grows to a tremendous size. But on light soil it bears very light crops.

J. J. Thomas is reported as saying that anyone who has the Versailles, Cherry or the Fay alone, need not take the trouble to get either of the others, unless the latter should prove after years of trial to be the most productive.

JEWELL STRAWBERRY.—A writer in *R. N. Y.* complains that this variety throws out very few runners, while the Belmont sends them out in abundance.

THE MARLBORO' RASPBERRY.—The Hon. Mr. P. Wilder says of this variety: "The Marlboro' is early and prolific, ripening its crop gradually, and when fully ripe is of good quality, good size and firm enough for traveling to a distant market; but to obtain these advantages the suckers must constantly be cut down. It is the most vigorous and robust of all raspberries."

INDUSTRY GOOSEBERRY.

This English Gooseberry, which has now been considerably disseminated in this country, appears to hold its place as a non-mildewing variety, a very unusual circumstance in this country, for all other varieties of the English Gooseberry have been subject to a destructive fungus on this side of the Atlantic, except in some particular spots, or for a short term, merely. The fruit is large, of a dark red color, and of excellent quality. It is quite productive. With this variety and Downing, and Smith's Improved, fruit growers should be able to raise handsome crops, and every private garden should be enriched by their possession.—*Vick's Magazine for January.*

A BIG YIELD OF STRAWBERRIES.

SIR,—I thought I had done exceedingly well with the Wilson strawberry last summer, but I see, according to John Croil, of Aultsville, I was beaten by "Mr. Beall's crop."

From a spot three rods one way, by five the other, in my garden, 975 quarts of Wilson strawberries were gathered last July. The mode of cultivation was as follows: The ground being well prepared in April, 1885, it was planted in rows two feet and a half apart, with thrifty plants from ten inches to a foot apart. Then Globe mangels and carrots (the large white) were sown midway between the rows of strawberries. Sixty bushels of roots were gathered in October, 1885. A selection from mangles took the first prize at the great Northern Exhibition in Collingwood. The strawberry vines covered the ground without thinning or directing after July, 1885, but they were treated with two or three bushels of hard wood ashes in March. J. B. AYLWORTH.

THE MICHIGAN HORTICULTURAL SOCIETY.

We clip the following interesting selection from the full report of the December meeting of that society, in the Grand Rapids *Daily Democrat.*

THE SOCIETY.

Seventeen years ago was organised in this city the Michigan State Horticultural society, an association which has grown to be one of the most vigorous and useful of all the societies of the State devoted to advancement of special interests. It has come to be one of the most important of its kind in the country, and its annual volumes are recognized as pomological authority everywhere, and the good it has done in promoting fruit growing in Michigan is incalculable.

The early years of the society were days of small things. It kept the character of a local society for some time, but when T. T. Lyon, of South Haven, became president, in 1875, and was joined by C. W. Garfield, of Grand Rapids, as secretary, the following year, the society took on new energy and a new character. To Mr. Lyon the welfare of the society has been a first love, and he has given it a vast amount of unselfish and unrequited labor. He has been intelligently and industriously aided by Mr. Garfield, whose enthusiasm and genius in hard work have been most fortunately combined with the efforts of the venerable president. These two have been rechosen year by year, and doubtless will be as long as they are willing to accept a modicum of honour with an excess of responsibility and labor.

HIGH CULTURE.

The following very valuable paper by Secretary P. C. Reynolds, of New York, was read by Secretary Garfield, under the head of "Intensive methods in horticulture:"

Very general complaint has come from nearly all sections of the country where small fruits are produced for markets that prices the past season were unremunerative. Such being the case, one of two alternatives seems to be indicated, namely: the reduction of volume of products or the diminution of its cost. It is a very difficult matter for fruit growers, scattered as they are over a wide area, to combine to reduce production. The orderly operation of the laws of trade and production have a tendency to diminish production when excessive, but combination rarely does. The prices of small fruits are destined, I believe, to rule low in the future, and growers will be wise to adapt their business to that condition of things. With unlimited land and labor for production, the amount produced will be likely to increase quite as fast as population. The proper way to cheapen production, in my opinion, is by producing more per acre. Every grower can do this for himself without the necessity of combination or co-operation.

Small-fruit growing used to be considered a branch of horticulture. Recently many have conducted it as if it belonged to agriculture. The result is not surprising. The horticulturist to grow large quantities of produce on small areas of land by means of heavy manuring and high culture; the agriculturist spreads his operations over broad areas of soil, which he cultivates enough to enable the roots of crops to spread through the soil, without serious obstruction, in search of adequate supplies of suitable food, and to prevent weeds from obtaining such growth as to overcome the plants he is seeking to grow. The horticulturist seeks a small tract of garden soil, near a town or city, where he can have an abundance of fertilizers, laborers of the right kind, and where proximity to market enables

him to deliver his products, from day to day, fresh to consumers.

Now it seems to me that too many small fruit-growers have, within a few years, come to adopting the methods of the agriculturist rather than those of the horticulturist. They have planted their fruits in fields instead of gardens; they have manured as if for farm rather than garden crops, and they have cultivated after the manner of farmers rather than as gardeners cultivate. Moreover, many have located remote from town, subjecting themselves to quite a tax in transporting their fruits to market and in transporting their laborers to and from their labor. Let the farmer stick to farm crops, and they who are fitted by nature, tastes and training for horticulturists grow small fruits. This, I think, is the natural order of things, and to this, I believe, we shall be obliged to come.

ARE MICHIGAN APPLES DETERIORATING?

President Lyon—They are deteriorating. Probably there is not more than one in 20 growers but are impoverishing their land.

Prof. Bailey—The increasing age of the orchards may account for it.

E. H. Scott—The apples certainly are deteriorating. We can no longer grow Esopus, Spitzenberg, Fall Pippin, Newton Pippin or Bellflower.

President Lyon said many reasons conduced to this. Growth from year to year in untoward conditions, the increasing age of trees, tend to deterioration. Yet in some particulars there is improvement, as increase of age of trees gives better flavour and keeping qualities, and it is a question where the balance of gain or loss would fall.

A note from H. W. Steere, of Adrian, stated that he did not agree with those who attributed the deterioration mainly to insects, but thinks exhaustion of the soil the exciting cause. Deep, black, strong clays are rare in Michigan, and our light sands and gravels cannot stand the exhaustion for forty or fifty years from grain, grass and root crops and fruits all on the same ground. He theorized that the soil has been relieved of the lime and ashes existant in it originally, and intimated that restoration of these would cure the existant evils. Use of stone-lime, a bushel to a tree, has been known to restore Newton pippins that had become small and scabby. Instead of letting go such valuable kinds as this and the Spitzenberg we should take steps to restore them.

W. K. Gibson—If the first apples were good, and the climate is not different, we should seek the adverse influences in the soils, and there we may find why apples deteriorate, if they do.

S. M. Pearsall would set Spitzenbergs were he to plant an orchard today. Insects are more numerous, and we cannot expect as good results from old trees, but when proper care is given we can do as well as ever.

S. D. Willard—It is well known that quick-lime is in no sense a manure, but, like salt, it sets free and makes available certain elements. With destruction of the forests, and other causes, fungoid diseases have wonderfully increased. The thin-skinned sorts were the first to suffer. The wheat, sheep and cattle that Michigan has sent to market have carried off the phosphoric acid which the fruit so much needs. The needed elements have been taken from the soil. Restore these and you will again be able to grow fine apples, even of the thin-skinned kinds.

STOCK AND SCION.

Replying to a question, Mr. Bailey said it was undecided as to the effect of stock upon the fruit of scions. There is often a mechanical influence, dwarfing

or magnifying the growth of the scion; but there are only a few cases, and they not well authenticated, of change in character of fruit.

THE CODLIN MOTH.

Discussion shifted to methods of combatting the codlin moth. W. A. Brown of Benton Harbor said growers in that vicinity had for three years practiced spraying apple trees with Paris Green with great success. Sprayed on just after the blossoms fall, the poison seems to kill off the brood of moths that survives the winter. This brood is small, comparatively, the main damage being done by the later hatchings. The effect has certainly been marvelous in making apples perfect, even when the adjoining orchards were not treated—showing that the moths migrate but little.

W. H. Parmelee used London purple this year and had more perfect apples than for years. There is danger of injury to trees by use of too strong solution. He used one pound to 50 gallons of water, but half the quantity is sufficient. The mixture was beneficial also upon cherry trees.

W.N.Cook spoke of the danger to the operator. Do not allow the spray to be blown back against you. Kerosene emulsion is said to be much better.

Prof. Ragan—Prof. Riley's position is that the emulsion is preferable. It is made of 75 per cent. of oil, 25 of soft soap, to one gallon of water.

S. D. Willard—It requires more skill to use the emulsion without injury to the trees than to use Paris Green. Three ounces to 40 gallons of water is a sufficient quantity, but the powder is often adulterated and so is of variable strength. I have used it upon pears also, while the blossom ends were upward, with good effect. Keep to windward of the spray and wear gloves lest the poison enter wounds upon the hands.

Mr. Cook—If the emulsion is perfect it remains uniform when diluted, but if the union of the ingredients is not perfect injury is likely to result.

NEWER SMALL FRUITS.

Wilson jr. Blackberry—Not materially different from the Wilson.

Marlboro' Raspberry—Opinions were various; does not show promised vigor; about like Cuthbert in growth, but not as good quality; if it doesn't do better Mr. Scott will take out his three acres; half the size of Cuthbert and of poor color, though at first did well; at Benton Harbor canes quite strong, ripens with Turner, firmer and better color than either Turner or Cuthbert and brought much better prices; grows slowly and of no consequence; there are several sorts of Marlboro'.

Lucretia Dewberry—Mr. Lyon has had good crops for three or four years; best dewberry he knows; is not derived from wild dewberry, but is a trailing variety of the high blackberry; may be a hybridization of the two; fruits well at Ionia, but turns red and sour; two weeks earlier than any blackberry.

Niagara Grape—Rots when the Concord does; white grapes are not more subject to rot than others.

Belmont Strawberry—One member only had fruited it and found it very promising; others were pleased with quality of the plants.

Golden Queen Raspberry—Fine color but same as a yellow Cuthbert; not bet- than Brinckle's orange.

Hilborn Blackcap—Less seedy than others and of fine quality, but not yet well tested.

PORTRAIT OF PRESIDENT LYON.

The Society, by committee, has had executed a very large crayon portrait of President Lyon, which is to go into the horticultural room in the state capitol, to help perpetuate his memory and good fame. It was revealed to Mr. Lyon last

evening, after a brief speech of eulogy by Mr. Gibson, rehearsing Mr. Lyon's exceedingly great services to the society. It was to Mr. Lyon a complete surprise, and he was so deeply moved that response was impossible and he quickly resumed his seat, asking to be excused from remarks.

ELLIOT'S EARLY PEAR.

SIR,—Referring to your notes on early pears in the December Number, I wish to say a good word for Elliot's Early. It is a native of Windsor, Ont. I procured my tree (Dwarf) from Mr. Dongall. It is a delicious pear, medium, but uneven, in size, a profuse bearer, and handsome in appearance.

They commenced to ripen with me last summer on 22nd July, and, the young people having discovered their merit, were nearly all gone by the 1st of August. They ripen on the tree a half-dozen or dozen at a time, and no sign of rotting at the core. The tree is not so hardy as the Flemish Beauty, but stands the winter here fairly, which, by reason of our elevation, is exceptionally severe. Grapes last year were almost a failure—spring frosts.

J. P. W., Stratford.

CONDENSED FRUIT REPORTS.

CHINESE PÆONY.—The Chinese Pæony received in 1883 did remarkably well, blooming the first and each successive year in spite of the injury done them by dividing the roots every spring, for propagating purposes. They are easily cultivated, requiring no protection whatever, and produce the finest flowers (though not the largest), when planted in soil only moderately rich. Those who grow only the common Pæony can form no idea of the beauty of the Chinese varieties. J. H. WISMER, Port Elgin.

THE PRENTISS GRAPE, received in 1884, made a growth of about ten inches while other varieties alongside, with less care, made five to eight feet. The first winter it froze, but sprouted the following spring from the roots and again made the same sickly growth, was again injured by frost, and now I consider it an utter failure, of no earthly use in this northern country. In this connection I may say that my grounds are fully exposed, and the climate here being a most vigorous one, n thing of a tender nature can be grown.

J. H. WISMER.

SMALL FRUITS.—The Fay's Prolific Currant promises well; and so does the Marlboro' Raspberry. The canes of the latter are large and strong. The fruit is large and very fine.

STRAWBERRIES did well. I find it a real success to clean and put the strawberry bed in a good condition soon after the fruit is off. I cut off all the leaves and runners, and work over the ground with a hoe. This appears to induce fruitfulness.

Would Mr. Beall or Mr. Croil tell us the kind of soil, the variety of strawberry and the mode of culture which resulted in so large a crop on Mr. Beall's place? SAMUEL FEAR, Brussels.

NOTES TO NEW BEGINNERS.

BY PETER PRUNING KNIFE.

The first step necessary to successful fruit growing, after selecting the location, is to prepare the

SOIL.

If not naturally dry enough it should be underdrained, and enriched, and cleared of all foul weeds—especially for small fruits. Quack grass, Canada thistles, and fruit will not flourish together, particularly the fruit, the quack and thistles may. I have spent more money in trying to clear these weeds from berries after they were planted than the fruit was worth and then had to plough them up. This was when I went on a new place and wanted to get

my small fruits planted the first year. While you are preparing your ground, make up your mind what you intend to plant and not wait for some tree agent to come along and tell you. There are always lots of these fellows around ready to show you in their catalogues and plate books, any amount of varieties which, if taken according to directions, &c., &c., will make you rich in about six months. (In experience if nothing else.) Don't buy all they offer you, if you do you will have too much *fruit*: besides it will be a *fruitful* source of annoyance to you to dig them out and plant them over after you have grown them a year or two. Find out from your neighbor, or through the reports of the Fruit Growers' Association and the *Horticulturist* what

VARIETIES

succeed and pay best in your immediate locality, and plant these varieties. It is not best, as the saying is, to "put all of your eggs in one basket," but if you are near to a good market a general assortment may be grown, from berries currants, grapes, &c., up to the larger fruits. Some seasons one or more kinds may fail and you will want to have others to depend on. If you are far from a market the shipping qualities of the fruits should be taken into consideration in making your selections. After you have made up your mind what you want, send your order direct to some *reliable* nurseryman—with instructions not to substitute—instead of having it placed on the blank of some traveling agent on which this clause is always printed: "If you cannot supply all the varieties named you can substitute other varieties considered by *you* equally desirable"—which means you will get whatever he likes to send you.

Have your grounds properly laid out before planting and plant each variety separately as much as possible and place those varieties which ripen at the same time near together, for convenience in gathering the fruit. Keep

A MAP OF YOUR GROUNDS

so if you want plants or scions of any particular variety at any time you may know just where to find them. "Be sure you are right and then go ahead" is a good motto for fruit growers. Get the *right* location, *right* soil *rightly* prepared, set the *right* varieties, and you are on the *right* road to success; providing *right* cultivation and care is taken, of which I may write in my next article.

Flowers.

WINTER FLOWERING BULBS.

BY HERMAN SIMMERS, TORONTO.

In our former letters we have drawn the attention of the readers of the *Horticulturist* to some practical hints about the care of winter flowering bulbs; but we must trespass the least bit from that line and think a little of the future. In the meantime we will allow the various bulbs to finish their growth and in our next issue we will speak of their after care. We purpose in this issue then to speak about the

DOUBLE TUBEROSE.

This bulb has been tried frequently by the amateur with almost in every case a failure, mainly due to the subject not being brought before his notice at the proper season of the year for planting. The varieties of the Tuberose that are generally grown are the Large Double and the Pearl. The former variety is not so much grown, principally on account of its long stems; the latter variety is more popular on account of its extremely dwarf habit. Its height is about two feet and therefore it is better adapted both for the amateur and the professional. The proper time for starting the Tuberose is during this month, when after treating it in a

TUBEROSE.

manner somewhat similar to the Hyacinths, etc., *i.e.* placing it in the dark and allowing it to root thoroughly, but with this difference, that they may be planted three in a quart pot, without in any way crowding or retarding their growth; also we would suggest that they be allowed to remain in the dark for a longer period of time than the Hyacinth, say about ten weeks. The growth of the Tuberose is slower than most bulbs, therefore sorely trying the patience of the amateur, who very often is on the point of despair, but just then patience should step in and allow nature time to develop the flower.

After being brought to the light it generally takes the Tuberose bulbs about three months to develop their flowers, except when they are being forced in a conservatory. Allow them to keep their slow, steady growth and those of our readers who grow them will be amply repaid by their show of flowers about the end of July. A point that may here be suggested, which would relieve the grower, is that they may be planted out in a bed about the end of May, care being taken when removing them from the pot, to keep the ball of earth from falling apart. This may easily be done by holding the upper portion of the pot with one hand, in a reverted form, then gently tapping it, and with the other removing the pot. Any person trying the Tuberose will be amply repaid for his trouble, being as it is the most fragrant of all flowering bulbs.

LIFE'S POETRY AND PROSE.

Fair and fragrant, full in foliage,
  Blooms a rose beside a wall,
Freely swinging, closely clinging
  To a stately stem and tall.

Fair to look upon in passing,
  Fascinating to the eye,
Spirit thrilling, joy fulfilling,
  To the daily passer by.

Safely hid 'neath leafy curtains,
  Pure of birth and gently born,
In its nesting, sweetly resting,
  Grows a wearing, tearing thorn.

Low among the dew-wet grass,
  Lies a serpent as in sleep,
After gliding into hiding,
  Down where noisome vapors creep.

Would you walk your way in safety,
  Through life's day from early morn,
Virtue's flower pluck each hour,
  Free from every vice and thorn,

Would you have the rose, O pilgrim,
  Would you gather it to keep,
Fully fragrant, brightly radiant,
  Look beneath before you leap.

C. W. BRYAN, *in Good Housekeeping.*

THE FASHIONABLE FLOWER of the day is at present the White Chrysanthemum. It is worn as a buttonhole, massed as a bouquet, and nestled among moss for table decoration, lightly veiled with maidenhair fern. Tinted ivy leaves very often form a background for it.—*N. Y. Herald.*

THE ASIATIC PITCHER PLANT.

A CURIOUS PLANT—THE ASIATIC PITCHER PLANT.

Of what are termed Pitcher Plants, there are a number of different kinds, belonging to different botanical orders. One of these is an American kind, also known as

THE HUNTSMAN'S CUP,

and the Side-saddle flower. Of this one, no doubt many of our young readers have met specimens growing wild, for it is found in many parts of America thriving in peat-bogs. The leaves, very curiously, have the form of an open cup, and are usually half-filled with water, much of which may be rain. Into this water many insects find their way during the season, only to drown.

But even more curious than the common American Pitcher Plant, is the Asiatic Pitcher Plant, of which an engraving is herewith given. It is over sixty years ago since the first species of this was met by Europeans, in China, and introduced into their hothouses. Since that time various other species have been found, but none is more interesting than the one here illustrated. This one is known botanically as *Nepenthes Hookeriana.*

In the engraving the peculiar appendages to the apex of the leaves, which give it its very appropriate name, are conspicuous. This formation is a veritable Pitcher,

EVEN TO THE LID,

which is hinged to one side. When

the Pitcher is in a young, forming state, the lid in some species is closed. As it develops, it opens, and even then, water is found in the receptacle, which proves that this fluid is a secretion of the plant. After the lid is fully open, no doubt additions are made to the water by rain and heavy dews. In this water, insects and even small animals are often drowned. A very remarkable quality of the fluid is that it

HAS A CERTAIN DIGESTIVE POWER,

and it is believed that the plant derives some direct benefit to its growth by the consumption of insects. Plants of this class have therefore been called Carnivorous or Insect-eating plants. The Pitchers vary in size to hold from half a pint to nearly a quart of water each.

The Asiatic Pitcher Plants are no strangers to American hot-houses. The plants require, in cultivation, condition of treatment not very unlike those suited to the Orchids.—*From Popular Gardening, with cut.*

Trees and Shrubs.

SUITABLE TREES FOR THE LAWN.

(Concluded.)

BY P. E. BUCKE, OTTAWA.

THE AMERICAN CHESTNUT *(Castanea Americana)* is valuable for its wood and nuts, and is ornamental in its appearance. It grows wild in the woods in the neighborhood of London, Ont., toward Byron, where there is a handsome grove. So far, I have never been successful in raising this tree from the nut in Ottawa, although I cannot say for certain that it was the severity of the winters that destroyed my seedlings. In its native habitat it grows on high, poor, gravelly soil. Its beautiful large glossy beach-shaped leaf gives it a fine appearance. The tree grows from forty to fifty feet high, and would require large grounds to show it off to advantage.

THE JAPANESE CHESTNUT *(Castanea Japonica)* is said to be hardier, is dwarf in form, and has larger nuts. I am testing its ability to withstand this northern climate. If it should prove hardy, it will be a great acquisition to our nut-bearing trees; at any rate, it would be a paying tree to plant by the acre in western Ontario, for the sake of its fruit.

THE THORN *(Cratægus)*.—Some of the wild species are very handsome, bearing a profusion of blossoms and fruit. The Cockspur *(Crus galli)* grows to twelve or fifteen feet high; its red berries give it a very ornamental appearance in the autumn. The double-flowering varieties of Europe are very attractive. I have found the plants of the latter fairly hardy here, although they have never flowered. I have had them growing for ten years past. In western Ontario they should be a success.

THE CATALPA SPECIOSA is fairly hardy, although the more tender shoots do sometimes kill back in exposed localities. Its large heart-shaped leaves make the tree attractive.

LINDEN, or BASSWOOD *(Tilia)*.—This native tree is too well known to need description. I merely mention it to call attention to it as a street tree, for which its fine umbrageous foliage peculiarly fit it. Its sweet-scented blooms in the early spring have a peculiar charm for the bees, and bee-men count the honey made from its inflorescence amongst the best flavored and clearest that is sent to market.

CUT-LEAVED LINDEN *(Tilia Laciniata Rubra)* is very striking, hardy, and pretty; it has bright rose-colored young wood.

THE EUROPEAN LINDEN *(Tilia Europea)* is very suitable for avenues. The

THE BLACK WALNUT.

leaves are a darker shade of green than the American variety, smaller in size, but are borne in greater profusion, forming a dense shade. The outline of the tree is regular and conical; it will suit itself to any soil, and is especially adapted to large lawns.

MULBERRY *(Morus)*.—The only variety of this tree I have succeeded in growing is the Russian. It quckly attains a good height, and stands the climate well; although the tips of the young wood often suffer, this does not check the tree's growth. I have tried Downing's, but it is far too tender. I should not advise any one building too much on the fruit to be obtained, but as it grows rapidly from cuttings, and the fruit varies considerably amongst the seedlings, one may arise in the multitude of those grown, which will be valuable. Its easy propagation, freedom from suckers, quick growth, hardy nature, and capacity for standing the knife should, I think, make it a very suitable plant for hedges.

BLACK WALNUT AND BUTTERNUT *(Juglans Nigra and Juglans Cinerea)* are both hardy, and make attractive looking trees, of good size. They are both of quick growth, besides which they have the nuts, for pickling and eating, to commend them. Their feathery, fern-like foliage gives them a striking appearance, and no place of any size should be without a few specimens of each of these trees.

THE CATALPA.

SIR,—I am sorry to report the same as last year "That I am afraid it is too tender for this climate." Last spring it came out strong to within 1½ inches of the tip of the last season's growth which was about 18 inches, but the frost on the 6th of May cut it down, and this year it has again sent up a shoot from the root about 22 inches and has seemed to be very vigorous the rest of the season. It is fairly protected and is in good ground with good drainage. A. J. COLLINS, Listowel.

Scientific.

ACCLIMATION.

BY D. W. BEADLE.

THE readers of the *Canadian Horticulturist* may remember the purport of a very interesting article by Mr. D. Nicol, at page 85 of Volume IX. In it he gives the result of thirty-two years of endeavor to acclimate many half-hardy shrubs and fruit trees. The conclusion at which he arrives is this, "that trying to make tender plants hardy is

only a waste of time and means." Doubtless this conclusion is quite correct with regard to the individual trees and shrubs themselves, but my experience leads me to believe that there is a way whereby we may, in process of time, secure a race of these very trees and shrubs that shall be perfectly acclimated.

In support of this view I point to the peach trees of north-eastern China, to the cherry trees of the Vladimir district of Russia, lying north of the fifty-fifth parallel of latitude, to the Catalpa of the north-western States, and to the evergreens tender from the Pacific slope, but hardy when raised from seed grown in Colorado. Why is it that these trees are able to endure the rigors of those cold climates, and not merely to endure, but to flourish and bring forth fruit if it be not true that there is such a thing as acclimation of half-hardy trees. How long a period of time has elasped during which this process of acclimation has been progressing to the full development which we now find, it is not possible to tell Nature's process are not usually rapid in the affecting of such results, "the mills of the gods grinds low."

Nevertheless, within the short span of half a century, I have seen a race of Biota orientalia, produced by the sowing of seed raised in our climate, that is perfectly acclimated, while the parent stock was with difficulty preserved from death long enough to yield seed. Hence I infer that by sowing seed, from trees that have been able to produce seed in any given climate, for successive generations, a race of such species of shrub or tree will in process of time be produced, that will be perfectly hardy in that climate. How long it will take to accomplish this, for how many successive generations it will be necessary to sow the seed, it is impossible to say. Doubtless, when thus taken in hand by an intelligent guide, nature will take longer strides and make more rapid progress than when left to her own faltering steps.

But whether it is worth our while to proceed in this slow, and therefore tedious, manner to accomplish our desired acclimation is quite another question. We now have means at our command whereby this work can be accomplished with far greater rapidity. The art of breeding for specific results is as much within the control of the horticulturist and orchardist as of the stock-raiser. Perhaps it has not yet been quite as fully reduced to a science by the former as by the latter, which, if true, only shews that there has not yet been as much careful study and experiment on the part of the horticulturist as has been put forth by the cattle-breeder. Yet enough has been done to prove that by the process of cross-fertilization we can blend in very considerable measure the desired size and quality of fruit with the wished for hardiness of tree. The thoughtful student and painstaking observer are wanted to work out these problems and reveal to us the laws of this procreation, so that, guiding his operations by these laws, the propagator may work with certainty to definite results. We have had enough of haphazard guess-work, of supposing that cross-fertilization has been effected merely because certain trees or vines were in proximity; it is time now for something like accuracy in our working, if we are ever to penetrate the secrets of nature's working. But when our cross-fertilization shall be performed with a knowledge of the laws of vegetable heredity, we shall hold a talisman more potent than any of which the wildest imagination has ever dreamed.

PARIS GREEN.

BY THOS. BEALL LINDSAY.

As an insecticide the verdict is unanimously in favor of the use of this poison.

Most persons now understand that

"a teaspoonful of Paris Green to a pail of water" is about the right proportion to use in destroying insect life, yet the uncertainty as to its effects on the foliage is as strongly felt as ever. This uncertainty is no doubt produced by the "indefinite quantity" as referred to by Mr. Thompson, *Canadian Horticulturist* p. 156, used on a given surface of foliage and in the manner of using it. During the past five or six years I have used in my garden and orchard about one pound of Paris Green per acre per annum, and have never known any injury to the foliage. I mix a quarter of an ounce of Paris Green and about double the bulk of flour with two gallons of water, and apply while thoroughly mixed, with a hand syringe having a very fine rose nozzle.

The quantity to be applied to each tree must depend upon the size of the tree, one gallon being sufficient for a tree with bloom enough to produce four or five barrels of fruit.

It should be applied when the tree is in full bloom, and again about a week later.

Injury to the foliage is caused by using too much Paris Green. Anyone may see however that the quantity of poison used on each tree is not necessarily in proportion to the quantity of Paris Green to each gallon of water, but *to the quantity of the mixture applied to each tree.*

As to the manner of applying the poison to the apple tree so as to accomplish the greatest good, with the least injury to the foliage, it should be understood (1) that the poison, to be effectual, must be applied to the centre of each blossom and that the smallest atom is sufficient, and (2) that any of the poison falling upon any other part of the tree will in no way prevent the operations of the Codlin moth. The spray should be so projected that it may fall on the blossoms in a very fine mist.

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 premium plants and trees.

Pd. 86.—If your address label reads thus, your subscription expired with December No. We send you January and February Nos. of 87 hoping you will renew, but if you do not wish to do so, please hand these copies to some friend who is interested in Horticulture. All names still unpaid will be promptly removed from our list after this number. The Report for 1886 will be sent only to those who pay their fee for 1887.

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 concerning 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 all 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.

Back Volumes I., II., III., IV., VII., and VIII of *The Canadian Horticulturist* are in stock at this office, and will be sent to any address at 60c. each, or with accompanying report for 75c. each.

Any Subscriber failing to receive his copy of *The Horticulturist* at the proper time will please notify us at once of the failure that we may send it him before the edition is exhausted.

A Package of Sample Copies of such numbers as Vol. VIII. as can be spared, containing coloured plates, will be sent to any one who will distribute them with the view of getting new subscribers.

Delay of January Number.—The following note from Messrs. Copp, Clark & Co., printers of the *Horticulturist*, Toronto, will explain the delay of the January number :—

"The January number of the *Horticulturist* is all mailed (Jan. 12th). We had a break down in our calendering machine, which, we regret, occasioned the delay in its publication, and is not likely to again occur."

THE HON. MARSHALL P. WILDER.

Whether we wish it or not we must at times lay down our spades and our pruning knives, and reflect upon the shortness of our stay among our beloved trees and plants.

Already our readers will have read the sad intelligence of the death of the Hon. M. P. Wilder, President of the American Pomological Society, at his home near Boston on the 16th. of December last. His birth away back in the year 1798 reminds us of the days of George III., George Washington

HON. MARSHALL P. WILDER.

and Napoleon Bonaparte. Early in life his taste for gardening manifested itself. He said on one occasion "My love for rural life and the cultivation of the soil is well known to you all. Oh ! yes ! I cannot remember the time, since my sainted mother took me into the garden to help dress and keep it, that I did not love the cultivation of the garden above all other pursuits."

For many years a leading merchant in the city of Boston, he yet found much leisure for his favorite study of Horticulture. His successful experiments in hybridizing are well known, and his pear orchard of some 800 varieties has become justly famous.

As time went on he devoted more and more attention to fruit culture until in 1848 he became President of the American Pomological Society which was organized in that year, and this position he held until the day of his death. Those were significant words of his at the complimentary dinner in Boston, considering they were spoken only two months before his decease :—"Life at the longest is short. I have passed its summit, and shall soon

reach the sunset shore, when I must bid farewell to things of earth. But if I can have the happiness to know that I have done anything to promote the comfort of mankind, I shall feel that I have not lived in vain. And so I shall continue to work on in the same old way while life and strength shall last."

At the January meeting of the Massashusetts Horticultural Society, a memorial was prepared by Mr. Wm. Strong. In presenting it he said : "Others will dwell upon the traits which gave him success in the various fields of his usefulness. We turn rather to notice his characteristics in his favorite pursuit of horticulture. In this he is best known. Here he did his best service for his fellow-men. It was indeed a favorite pursuit, a genuine love. While engaged in a large commercial business, he yet found time for extensive importation and cultivation of a great variety of hardy and exotic fruits, plants and agricultural products; being one of the earliest introducers, and always on the alert to obtain and test new kinds. This enthusiasm was life-long, and was as hearty in the cultivation of pæonies as pears, or in the case of camellias or or dahlias or azaleas as of raspberries and strawberries. Undeniably he was stimulated by a desire to exhibit the best; but before and deeper than this was a hearty interest in every form of cultivation of mother Earth. From my earliest acquaintance with Mr. Wilder, more than thirty years since, I recall a reverent appreciation of the wisdom and goodness of the Creator in all his material works. And I think as the years went by a steady and a marked increase of this feeling was to be noticed, a leading from Nature up to Nature's God, so that he gave frequent expression of his gratitude to the Infinite Ruler of the Universe.

"We shall love to recall the picture of this patriarch as he walked among his plants watching to obtain some new results and improvements by crossing and varied culture. It seemed as though his occupation was to him the very elixir of life, imparting to him a perennial youth. How different in its result from a life spent in the absorbing and selfish pursuit of gain or worldly ambition! And yet in other respects Mr. Wilder was an old man—his life was completed; his was a sublime old age, full of good works. The world is better, how much better, for his living in it! Long shall we cherish his memory; long may we be stimulated by his example."

Mr. Robert Manning, the Secretary, said :—

He had hoped that Mr. Wilder might live to the meeting of his favorite society, the American Pomological Society, in this city in September next, but it has been differently and, we cannot doubt, more wisely ordered. He himself felt deeply the uncertainty of his stay until that time, for in the address which he prepared for the meeting at Grand Rapids, Mich., in September, 1885, after expressing his regret that he was unable to be there personally, he said in words that now seem prophetic, "I console myself with the hope that you will accept the invitation of the Massachusetts Horticultural Society and come to Boston in 1887, when I may be permitted to lay off the robes of office with which you have so long honored me, unless, ere that time, I shall have been clothed with the robes of immortality and gone up to gather celestial fruits, which ripen not in earthly climes."

One of Mr. Wilder's most prominent characteristics was the perpetual youth which, in spite of the infirmities of age, he carried with him, and which led Governor Long, in his speech at the meeting of the American Pomological Society in 1881, to speak of him as at

once the oldest and the youngest man in the State. This had been attributed to his love for rural pursuits; but the speaker thought it due rather to his kind and loving heart, continually overflowing with regard to every one, so that they who had known him but a short time felt that in his death they had lost a dear friend. This thought, the speaker said, had been better expressed in Whittier's lines, with which he closed.

"To homely joys and loves and friendships
Thy genial nature fondly clung;
And so the shadow on the dial
Ran back and always left thee young."

May the spirit which characterized this gifted and noble-minded man be caught by many Canadian horticulturists, who will pursue their favorite avocation not merely from sordid motives and selfish purposes, but in the interests of science and in the progress of the nation in one of her most important branches of industry.

OPEN LETTERS.

From British Columbia. — Mr. G. W. Henry, of Port Hammond, B.C., writes: "We are going into the small fruit-growing and nursery business here, and we want *The Horticulturist.* Before long we will be able to tell you something about this the finest fruit-growing district in America, and send you some samples that will make eastern people open their eyes; for I have such large and fine specimens of apples, pears, plums, yes, and cherries, too, as cannot be touched by anything in Ontario. *They have the flavor, too, of our Ontario fruit.*"

Commission Agents. — Joseph Bourne, Niagara Falls South, writes: "I think there ought to be some way of letting the members of our association know, through the *Horticulturist,* of any firms that do not deal fairly with their patrons.

"I think they should be warned to beware of Jackman & Lindsay, Toronto. When we sent them anything, they made us no report of sale, until they sent their bill of all the sales. For instance, with grapes, they never let us know at what prices they were selling them until the season was all over; and the same with our neighbors."

We can sympathize with Mr. Bourne in his experience, having shipped extensively on commission every fruit season for the last fifteen years. One does not like shipping fruit in the dark, and placing his whole crop at the mercy of middlemen; and no commission house can expect to succeed that does not adopt a system of giving shippers constant information concerning receipt and sales of their goods, and reliable quotations of prices current.

Indeed, of late years, the margin of profit has been too small on most fruits to bear dividing up with commission men, and those growers are fortunate who are able to make their own sales.

However, we have received prompt remittances and daily market reports from the agents of the Niagara District Fruit Growers' Stock Co. at Toronto, London, Ottawa, and Montreal; and also from the firms of Messrs. McWilliam & Everist and Mrs. W. Bilton, Toronto; and Messrs. Vipond & McBride and Clogg & Co., Montreal, all of whom we believe to be perfectly reliable.

THE FRUIT KING OF CANADA.

The *Pall Mall Gazette* of December 15th gives a very interesting account of an interview with the President of our Association, and in the introduction speaks of him in the following tributary language:—

"No visitor that the Colonial Exhibition has brought from the England

beyond the sea has been more welcome at this office than Mr. Alexander McDonald Allan, of Goderich, Ontario, the Fruit King of Canada, not so much because he is a type of exactly the citizen of Greater Britain that one likes best to come into contact with, as because he is a foremost representative of the most important industry there, and the one in which Englishmen are most interested at the present moment. Mr. Allan is a tall, broad-shouldered, black-bearded man of perhaps between forty and fifty, with a gentle face and a deep, tender voice. The secret of his gentleness is soon learned, for 'I was born a fruit-grower,' he says; 'and, though my father was on a farm, it was always in the orchard that they looked for me. No doubt I am prejudiced,' he adds apologetically, 'but I do honestly think there is nothing in the world to compare with fruit-growing,' and, plunging straight into his subject, Mr. Allan drew a really admirable and almost pathetic analogy between a tree and a human being. 'I would be as kind to a tree as I would to a person. I would not hurt it for the world.' and he lays his hand kindly on the office table, as if in mute protest against any living wood having been turned to so base a purpose. He explains how a tree feels a wound exactly like a man does; how the older it is, to a certain extent, the more it feels it; how wicked it is to needlessly lop a limb off a tree; and how a tree that has just borne a large crop of fruit must be treated with the same consideration and care as a mother who has just brought a child into the world.

"Mr. Allan is the President of the Ontario Fruit Growers' Association, a position which it has taken him many years to reach. He is recognized by the fruit-growers both of Canada and the United States as one of their most trustworthy experts in all horticultural matters. He is, and has been for a long time, the largest exporter of fruit to England, and he is in England as Fruit Commissioner of the Canadian Court of Exhibitions."

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.

3. Early Strawberry.—*What is the most profitable one?* (A. D.)

The Crescent Seedling is the leading variety for earliness and productiveness. At the December meeting of the Ohio Horticultural Society four objections were urged against this berry, (1) too many runners, (2) too small, (3) too soft, (4) deficient in table qualities; and yet it is more extensively grown in Ohio than any other variety.

4. Pruning Pear Trees.—*Should a pear orchard be pruned?* [A. D. Mohawk.]

Yes. Superfluous branches should be cut out, and the new growth shortened when it grows too rank.

5. Deciduous Tree for Wind Break.—*What is the most suitable, deciduous, quick growing tree to plant in a single row for a wind break in uncultivated ground? How is the Lombardy Poplar?* [R.]

The Lombardy Poplar is good until it gets old, when it becomes unsightly. We would suggest the Silver Maple.

6. To make Pear Trees bear Fruit. — *I have Flemish Beauties twenty feet high and eleven years planted which do not bear. What would you do for them?*

[F. Anderson, Ayr.]

Your idea of cutting off the top, and pruning them well, if done in June, would tend to throw them into bearing. Root pruning will also be serviceable.

7. Growing Cranberries.—*I have a lake which, I think, could be dried sufficiently to grow cranberries. I saw by The Horticulturist that the bed should be covered with sand. Why? The lake has a peat bottom. Wild berries grow well around it without sand. What quantity of vines should be put on an acre? What would the probable cost be per acre? Are tame berries much better than good wild ones?*

[S. H. Kerfoot, Penetanguishene.]

We cannot better answer Mr. Kerfoot, nor more interest other readers, than by condensing the following remarks from an excellent editorial in the *Farm and Home.*

Cranberries are profitable providing you have (1) a free supply of water at all times under control; (2) a bog located so that it can be either drained or submerged at will; (3) the right kind of soil; and (4) a convenient sand bank.

In Cape Cod the cost of making a bog and planting runs from $250 per acre upwards, but a fair yield is 100 bushels per acre; so they pay well if everything is favourable.

You want water for the purpose of protecting your vines, so that you can flow your bog and protect it from freezing, and afterwards, in the spring-time, for the purpose of killing the vermin that infest the vines. You need to protect the crops when very severe frosts come on suddenly, by flowing the bog rapidly and covering the berries, thus saving them. A swamp soil, not too peaty and with some loam in it, is the best kind of land. Trees, bushes and bogs must be rooted out and the bog made smooth. Then cover to a depth of three to eight inches with sand or fine gravel—the deeper the sand the longer the bog will last. Loam will not do, because it brings in weeds and grasses, and is not as warm as sand. The sand assists in protecting the berries from frost and injury. It keeps out weeds, and serves as a mulch in warm weather. It also keeps the bogs from running to vines, because cranberry vines, if you put them in the mud, will run so much to vine that they will not make the uprights on which the berries grow. The sand has to be wheeled in wheelbarrows on planks, and spread by hand Before sanding, make ditches about three rods apart running into a main ditch and with such direction and fall as will speedily conduct the water from the dam over the bog, and most readily drain it off to a depth of at least 18 inches.

Fertilizers are seldom applied, as they cause too much wood growth at the expense of the fruit. Ground bone in moderate quantities is probably the safest fertilizer to use. Bogs run out after a time, but may be renewed by mowing and burning the vines and resanding. There are bogs on Cape Cod that are yielding profitably for their 32nd year. The vine is very hardy, and may be set at any time, but the spring is best. The usual course is to punch holes in the ground, about eight or ten inches apart each way, and insert therein two or three vines, and afterwards press the soil around them. Some cultivators of large experience set the vines in shallow furrows and cover them, leaving out the end of the vines. It is important to put them down below the sand, so that they may take root in the soil. It should be kept clean of weeds until the vines cover the soil entirely. If the bog is kept covered with water until June 1, or until danger of frost is past, most of the vine insects will be killed, except the fire worm, which is killed by sprinkling the vines with a strong solution of tobacco. It is necessary, also, to flood the bog when early frosts threaten, and so turn off the water before the berries rot.

Bell, Bugle and Cherry are the leading kinds. Early Bell is the standard early—of good size and very dark color, keeps well and is productive. It blossoms and ripens in New Jersey ahead of all other varieties fully two weeks. Black Bell is hardy, good size, dark color and yields well. Richmond Bell is large, fair, very prolific, but rather late. Bugle is large, long, not early, fruit apt to be coarse and saded green; good on well-sanded bogs, not too wet and cold. Creeper is cherry-shaped, extra large, light color, very prolific, rather late, not a good keeper, adapted to localities subject to scald. Long Pond is a useless sort. The Cherry cranberry is of two kinds—large and small. It is very hard, dark crimson, medium early and a most popular market berry. The darker the color the better the berries will sell.

8. Infusorial Earth.—Where can it be obtained? Give address.

9. Lucretia Dewberry.—*My plant has made a number of long vines. How should they be pruned?*

J. W. M., Toronto.

We cannot answer from personal experience. At the Cleveland meeting of the American Horticultural Society, Mr. Caywood said "We tie the upright vines to a stake, and then let them trail over the ground near the stake." Mr. Albaugh, at the late meeting of the Ohio Horticultural Society said "The plants are set seven by eight, and cultivated the eight foot way, the vines lying on the ground in a matted row, four feet wide." Mr. J. H. Hale of Connecticut says "They are planted in rows eight to ten feet apart, with plants four or five feet apart in the rows, forming a thick matted row or bed four or five feet wide."

10. Pruning raspberry plants.—*How close to the main stem should side branches be cut?* [J. W. M.]

Mr. A. M. Smith of St. Catharines replies: "In regard to cutting back raspberries; cut side branches 6 to 12 inches according to growth of canes: if canes are very slender, 3 to 4 inches."

11. Hardiest cherry.—*Is the Vladimir, or large Montmorency the hardiest, and will they grow here.*

[W. A. Smith, Coverdale, N. B.]

The Vladimir. It should be hardy enough for New Brunswick.

12. Grapes in New Brunswick.—*Can grapes be grown as far north as New Brunswick; if so, will the Niagara succeed?*

[W. A. S.]

Mr. W. E. Wellington of Toronto replies: "I do not think that grapes can be successfully grown in New Brunswick, without being laid down in the winter.

As you are aware, in the Ottawa Valley where the thermometer goes much lower than it does in western Canada, they raise grapes successfully, and grow many fine varieties, but during winter the vines are laid down and covered with a little earth. If that trouble is taken, they can be grown in New Brunswick, and the best varieties, would be Worden, Moore's Early, Champion and Early Victor. I do not think the Niagara would prove a success, as it ripens rather too late."

13. Best side of a building for grapes.—*In planting around a building which is the best quarter, N. S. E. or W.*

[W. A. S.]

M. W. E. Wellington: "I do not approve of planting vines near a building but prefer the open field, or garden. Would select the South provided the vines were laid down, so they would not start too early in the spring, if they must be planted close to a building."

14. Vladimir cherry.—*Will you kindly describe this cherry.*

[W. T. Goldsboro, Brooklin.]

This is the most important cherry in all Russia. It is named the Vladimir because in that district its culture has attained enormous proportions, and it is shipped away to market by the car load.

It is very hardy and bears fruit even where grown a neglected fashion. The tree is dwarf in habit, indeed rather a bush than a tree, some of them being of weeping, others of erect habit.

The flesh of the cherry is a deep purplish red color, and the skin reddish black, and loses its acidity when fully ripe, See Report for 1883 p. 224.

15. Wilson Junior Blackberry.—*Have any readers of the Horticulturist grown the Wilson Junior Blackberry sufficiently to know whether it is as good as recommended, or not, I hardly think it equal to the Snyder.*

W. C. Reid, Enterprise, Ont.

REPLIES TO PREVIOUS QUESTIONS.

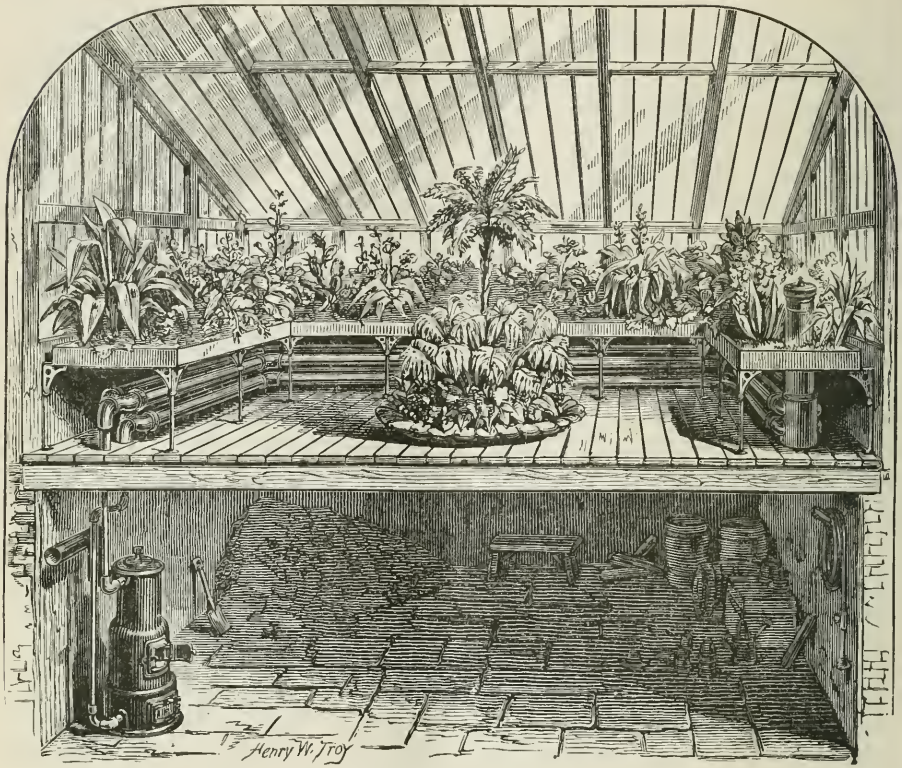
Stock and Scion. (9 vol. ix.) Dr. Hoskins of Vermont has collected considerable evidence in favor of the view that the stock does sometimes effect the size of the fruit grown upon the Scion. He says in *Vick's Magazine:* "Regarding the effects of top-grafting apples into crabs, a practice very common in Northern New England and the Northwest, there is no need of weighing much evidence, since every extensive fruit-grower and nurseryman in Minnesota, Northern Iowa and Wisconsin has in his grounds plenty of proof that very marked changes are so frequent as to cause growers frequently to say, when shown a new apple thus grown, 'I cannot say how near this comes to the original in size, color or taste, for it was grown top-grafted in a crab tree.' * * * But this is not to say that top-grafts in crab trees never produce fruit true to type, for they frequently do, and this irrespective of the character of the wood union at the point of inserting the Scion. I have learned by experience that some of the crabs make pretty good stock, at least for some kinds of large apples to be grown upon; but which will, and which will not, can only be determined by experience."

In the last report of the F.G.A. of Nova Scotia this very interesting subject is ably dealt with by Prof. Hind, who inclines to the opinion that a scion grafted upon a slower growing stock will be likely to produce larger fruit than under other conditions, and also, that the *time of ripening* of the fruit is affected by the habits of the stock. We hope soon to be favored with the results of further experiment in this direction.

Rust on Strawberry Leaves. (13, vol. ix.) Prof. J. C. Arthur of the New York Agricultural Station writes: "The strawberry leaf which you enclosed is affected by *Ramularia Tulasnei*, a common fungus growing upon strawberry leaves everywhere. It is said to be kept somewhat in check by burning the leaves off from the beds after fruiting.

Greenhouse and Heating. (11, vol. ix.) In order to answer this question still farther we wrote Messrs. Hitchings & Co., 233 Mercer street, New York City, asking the favor of the cut shown below representing a complete and efficient heater, designed expressly for heating small conservatories such as are frequently attached to dwelling houses.

These heaters are managed with as little trouble as an ordinary self-feeding coal stove. The illustration represents a small conservatory 10x20 ft. attached to the dwelling. The heater is shown in the cellar under the conservatory with two 1½ inch pipes rising from it through the floor, and connecting with four 4-inch heating pipes which pass around the three exposed sides of the conservatory, and terminate in an expansion tank shown at the right hand corner. If it is impracticable to sink such a pit, it can be arranged to have



CONSERVATORY.

the heater on the same level as the conservatory floor by changing the location of the tank, and the height of the heating pipes. The price of these heaters ranges from $35 to $80.

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 Rural New Yorker.—From our earliest recollections this valuable farmers paper has been a household favorite. It is always bright fresh and vigorous. There is nothing stale about it, nor is it one sided, but it contains original articles of great value upon every department of farm life. The address is 34 Park Row, New York City.

CATALOGUES.

Vicks' Floral Guide for 1887 comes to hand, if possible, in a more attractive form than usual. It has a beautiful colored plate of pansies, representing a straw hat full of extra choice and Giant Trimandeau, the latter a new and extra large variety. It has another colored plate representing five varieties of bordering and bedding plants, while the cuts of flowers throughout the book are as numerous and complete as in former years.

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New Fruits.

THE ITASCA STRAWBERRY.

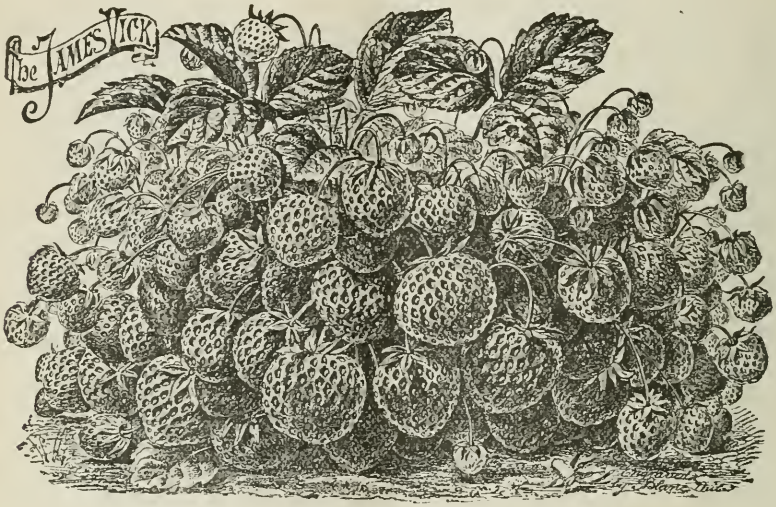
"Rather out of season," we imagine we hear our readers say as they open up the March No. of this Magazine, and see still another frontispiece of ripe strawberries. We hope however they may appreciate a sight of the imitations all the more, considering that the real article is three or four months distant.

The past season has brought into public notice several new strawberries for which great things are claimed by the originators, but which have as yet been wholly untested in Canada. Among these the more prominent seem to be the Itasca and the Jessie, the latter of which was described last month in these pages.

The *Itasca* was originated by Mr. J. H. Haynes of Delphi, Indiana, and will be introduced into Canada by our old friend Mr. J. Little of Granton, Ont., who says of it: "I saw the plants on Mr. Crawford's grounds after the meeting of the American Horticultural Society at Cleveland, and he spoke so highly in praise of it, that I thought if the expense would not be be too much, I would bring it before the strawberry loving growers of Canada."

Mr. Haynes in his circular claims for the Itasca the following points of excellence, in which we hope he may not be disappointed. We quote his own words:—

"In offering the Itasca to the public I feel confident that it will fill a place now vacant on the list of strawberries. I claim for it that it is a rival of the Crescent in productiveness, health, vigor, size and beauty, and that it is very superior to the Crescent in quality, manner of ripening, and for endurance to the end of the season in ripening its entire crop. It is a seedling of the



Manchester, fertilized with Seneca Queen under glass, excelling both of these varieties in every respect. It is pistillate like all our productive kinds."

Mr. M. Crawford, a member of our own Association, living in Ohio, in a report of new strawberries, writes as follows :—"Itasca; no *better* berry as far as quality is concerned, has yet appeared, I have seen twenty-five ripe and two hundred green berries on a single plant. It is quite regular in form, obtusely conical, bright red, and averages about an inch in diameter."

As soon as we have tested the Itasca we shall be very glad to give farther information concerning it; but at present we can only say that any berry which, upon thorough trial, may be ranked along with the Crescent, Jewell or Manchester, is certainly well worthy of propagation. In the coming berry we want excellence of quality, more than we want productiveness. For the latter quality probably no berry surpasses the *James Vick* of which the accompanying cut is no exaggerated representation: but this characteristic instead of commending it has proved to be its fault, in these days when fruit of small size, and ordinary quality is glutting the markets, and scarcely pays the expense of gathering and shipping.

OTHER NEW STRAWBERRIES.

BY M. CRAWFORD, CUYAHOGA FALLS, OHIO.

THE JESSIE.—I have fruited it twice, and I have watched it with great interest on account of the wonderful reports that reached me concerning it. I am unable so far to find one weak place in it. The plant is all one could ask for size, vigorous growth, health, hardiness, and productiveness. Blossom perfect. With me it is wonderfully productive, very large, of good form and color, and one of the best in quality. It ripens all over at once, and is firm enough for distant transportation.

ANNA FOREST.—From D. Brandt, of Bremin, O. Sent out as the largest berry in the world. Not yet fruited here.

JOHNSTON'S SWEET BLACK CAP RASPBERRY.

OHIO.—Originated in southern Ohio, by Geo. L. Miller. It is a seedling of the Kentucky. The plant is wonderfully vigorous, and about twice as prolific as its parent. This is its record at the Ohio Agricultural Experiment Station, where it has fruited several years. Blossom pistillate. The originator writes that it is much more productive than Kentucky, bright red, and less inclined to show bruises. It yields one or two pickings after Ken-

tucky, and will give more quarts and more money than any other late variety. In growth it equals the Crescent.

CRAWFORD.—All things considered, this is the best berry ever originated by me. I have fruited it five years, and intended to say nothing about it for some time, but an account of it got into the *American Garden*. I always thought that if I raised a seedling that was ahead of all others, I would call it Crawford. This is the only one considered worthy.

JOHNSTON'S SWEET RASPBERRY.

This is a new black cap raspberry which is being sent out from Central New York by Mr. R. Johnston. He claims for it, after four years' trial, that in quality it is particularly sweet and delicious, and that it surpasses all others for evaporating purposes. In season it is about the same as the Tyler, and in size it is little less than the Gregg.

We are not personally acquainted with any one else who has fruited this berry, but we find that Mr. T. T. Lyon, Pres. of the Michigan Horticultural Society speaks highly of it, especially with regard to its quality as an evaporated fruit.

THE GOLDEN QUEEN RASPBERRY.

BY T. C. ROBINSON, OWEN SOUND.

In May, '86, I set out a few rows of this variety with plants which had been grown from root-cuttings in the greenhouse during winter.

Some of the growing canes were nearly a foot high, and it was reasonable to expect that the check of transplanting would induce a formation of fruit-buds on the green wood, which the after-growth of June and July would develop into berries. In this hope I was abundantly justified by a fine show of blossoms in midsummer, which ripened up finely in August and September. Of course, such abnormal fruition cannot be regarded as a decisive test of the variety—nor can any single test—but a very good idea of the size, beauty and quality of the berries was fairly obtainable, and also of the tendency of the variety to productiveness.

I found the berries to be very large, as nearly as possible of the size, shape and firmness of well-grown Cuthberts. while the color closely assimilates that of Brinckle's Orange. The plant proved on this test to be a fine vigorous grower, fully up to, if not excelling, the Cuthbert. The leaf so closely resembles the Cuthbert that an expert might mistake one for the other; but one glance at the whitish-green cane shows the variation.

In quality it has been pronounced equal to Brinckle's Orange. Fall-grown berries are often inferior in quality to the crop of the regular season, so that my test proves nothing conclusively on this point; but it is only just to remark that with me they were not so good as Brinckle's, but fairly up to the Cuthbert's standard.

Upon the whole I am exceedingly pleased with my experience of this variety. A raspberry that looks just like Brinckle's Orange, that is productive as Cuthbert, and remarkably firm, needs only proof of hardiness to simply place it at the very head of the list, and beyond the competition of any other known variety of its color. Unusual hardiness is claimed for it, and seems fairly promised by its Cuthbert parentage, so that fruit lovers may smack their lips in anticipation of a large, reliable, white raspberry, equally good for home use or market.

Of course further tests in this and in other parts of the country may develop faults that do not now appear; but at present I must regard its indications of success as unusually promising.

Prunus Simoni.—Mr. L. H. Bailey writes in the *American Garden* concerning this fruit, that he thinks hardiness its chief merit. He had it on an exposed location and, yet it came through the winter of 1885-6 unimpared. It fruited last summer, but its size was against it not measuring over one and a-half inches in diameter; and the flavor, though at first sweet, left an unpleasant bitterness in the mouth. In appearance it was very handsome. It is not a hybrid between a peach and a plum, but a true, natural species. It derives it name from M. Eugene Simon, who introduced it into France from China.

Fruits.

RAMBLES AMONG FRUIT GROWERS.

THE WESTERN NEW YORK HORTICULTURAL SOCIETY.

On the 26th and 27th of January last we had the pleasure of attending

J. J. THOMAS.

this, one of the most prominent horticultural societies in the world.

Among the gentlemen whom we were privileged to meet were the following, viz., Mr. P. C. Barry, the venerable President, whose name has long been associated with the progress of fruit culture, both in Canada and in the United States; Mr. J. J. Thomas, Horticultural Editor of the *Country Gentleman*, at Albany, who has been long recognized as a pomological authority; Mr. E. Long, Editor of *Popular Gardening*, Buffalo; Dr. Sturtevant, Director of the New York Experiment Station; Mr. J. S. Woodward, Secretary of the State Agricultural Society; Mr. S. D. Willard, Nurseryman, of Geneva; Mr. Chas. Green, Editor of *Green's Fruit Grower*, and others.

The meeting was held in the City Council Chamber and was attended by some four or five hundred fruit growers. The subject of the

CURRANT

was introduced by Dr. Sturtevant. His paper contained a history of this fruit from its first notice in England in 1597 down to the present time.

Mr. Barry said: "The currant is one of the best, but one of the most abused fruits in the whole catalogue. Give it plenty of manure and good cultivation, and you have splendid fruit, and abundance of it."

Mr. J. J. Thomas said the

APPLE CROP

in Cayuga County had been very short. The fruit fell off soon after it was set, and was small in size. Those trees which bore well had been in every case highly cultivated and top-dressed with manure. The Greening had borne better than the Baldwin.

Mr. Chase reported that in Wayne County

SMALL FRUITS

had been unprofitable. Strawberries had sold largely at 3c per quart. With raspberries there was one advantage, viz., that when they were very cheap

they could be evaporated. Evaporation of fruit was becoming a necessity with the fruit grower. Nearly every farmer in Wayne County had his evaporator, by which he could evaporate from 40 to 300 bushels of fruit per day.

A berry picking machine was here exhibited, by which it was claimed that four or five bushels of raspberries per day could easily be gathered by one person. The machine is wheeled up to a tree, and the ripe fruit whipped off into a hopper.

QUINCES AND PEARS

having been reported as sold at a very low price, Mr. Barry said he had sold his quinces at from $3.00 to $5.00 per keg or half-barrel. He shipped a few at a time, just when they were most wanted in the market. The same with his pears; by a little management he got $3.00 to $4.00 per half-bushel for his extra choice.

Mr. W. C. Barry added, "You must select the very best, and sell it at a high price; the balance you must sell for what it will bring." Mr. Hooker thought it quite possible to put up good fruit in good shape, and yet do badly.

(To be continued.)

PROMISING CHERRIES.

What cherries are the most promising for orchard planting in Western Ontario? W.

In reply to this question Mr. E. Morris writes the following paper, the value of which we can fully appreciate, having vainly tried for fifteen years past to make money out of an orchard of Duke and Bigarreau cherries of all the finest varieties:—

"I would recommend as a class the Morellos, although there are a few in the Duke and Bigarreau classes that can be grown profitably in some sections.

Of the Bigarreau, we have noticed the variety known as Great Bigarreau the least affected by rot, the great trouble with this class of cherries. It may be described as follows: Large size; very dark red, or nearly black when fully ripe; half tender, sweet and excellent. Very productive.

The Morellos as a class are quite as hardy, and resemble in appearance and habits of growth the common red cherry of the country, but without their bad habits of throwing up sprouts or suckers, and, as far as my observation goes, are not subject to the black knot that is destroying the common cherry everywhere in Ontario, except in a few most favored localities; and in view of this fact, I am impressed with the belief that any one planting out the improved varieties of Morello cherries in orchard form (15 feet apart each way) will realize a handsome profit from the investment. I would recommend the following varieties, in order of merit:—

EARLY RICHMOND. — Medium size; dark red; melting, juicy, sprightly, acid flavor, and when only half-ripe resembles the common red cherry, but after this time it will continue to increase in size for at least two weeks, at the same time becoming darker in color and sweeter in flavor; is unsurpassed for cooking purposes and exceedingly productive.

LARGE MONTMORENCY. — A little larger than the preceding, and about ten days later; otherwise resembling it very much.

ENGLISH MORELLO.—A very slow grower and usually a very poor tree on account of slowness of growth; medium to large; blackish red, rich, acid, juicy and good, and on account of its richness is one of the best for canning. Very productive, ripening in August, long after all other cherries are gone.

Of the new Russian varieties recently introduced into this country I can not say too much in favor of the

OSTHEIM, its *only* fault being that it is such a slow grower that it will make it expensive for nurserymen to grow. Some small trees that were imported direct from Russia three years ago have borne each year since planting out; last season *very* full. On one tree, in which wasps had built a nest, they acted as a guard to the protection of the fruit, which was allowed to come to full maturity. Upon testing the fruit at this time I was impressed with the flavor being the richest and having more substance than any other variety of the Morello class of cherries; at the same time being one of the most productive and early bearers. In color, dark red, becoming, when very ripe, dark purplish-red; flesh very dark, juicy, with a pleasant, sweet, and subacid flavor.

LITHAN, also a Russian. This is in tree a better grower than the preceding; fruit, a trifle larger and of lighter color.

VLADIMIR and PARENT have not as yet borne, though am much pleased with the growth of the trees, and all are evidently very hardy."

SUCCESS WITH SMALL FRUITS.

BY E. MORDEN, NIAGARA FALLS, SOUTH.

To grow and market small fruits profitably, requires several conditions.

1st. *The soil must be suitable.*—As small fruit plants occupy the same spot for several years, and are cultivated and kept clean with considerable difficulty, a mellow, warm soil is essential. While some of them will succeed upon a variety of soils, the profitable plantations will mostly be found upon sandy loams.

2nd. *The situation is of great importance.*—The necessary manure is not always obtainable at points remote from villages, towns or cities. Shipping facilities to reach distant markets, as well as local markets, are prominent considerations. If there are several routes by which distant markets can be reached, considerable advantage will result. Fruit that is picked one day and teamed for several miles the next morning, is, of course, in bad condition, and is not likely to remunerate the grower, while it certainly injures the general market.

3rd. *The man must be of the right stamp.* — In my own neighborhood, where the soil and situation are exceptionally good, I have seen many failures. The man who is a general farmer may safely leave the small fruit business alone. He will, as a rule, make nothing himself, while he is sure to injure the business for others. The farmer's harvest, and the fruit harvest, come together; one or the other will be neglected. The good, careful, tidy farmer who hates weeds with an enduring hatred, may, of course, drop his ordinary farming and become a successful grower of small fruits. He has already much of the necessary practical knowledge, and if he is studious and thoughtful, he can learn the new business. City men and others, not already good, careful farmers, have very much to learn, and will, in most cases, fail. The man who is willing to study up the business, and who has persistent pluck, sufficient to keep him at work on his plantation for eight months in the year through a series of years, and who has some capital, some business capacity, and a suitable soil, suitably situated, may try the small fruit business. Under any other circumstances it is safer to leave it alone. It undoubtedly possesses attractive features. Human nature will require to be revised before we can look with indifference upon the beautiful fruits. The coming man will continue to eat berries. The coming fool will continue to produce them at a loss to himself. The coming fruit-grower who fulfils reasonable conditions will probably average fair profits.

FRUIT AT OUR LOCAL EXHIBITIONS.

BY J. H. WISMER, PORT ELGIN, ONT.

Any one interested in the fruit department of our Township Fall Shows cannot but notice the errors so common in naming the different varieties of apples, pears, etc. Especially prevalent is this fault among our fruit-growing farmers—some of whom are rather extensively engaged in this branch of their occupation—and I believe I am but giving the opinion of all who are in the habit of judging at our local exhibitions, when I say that not one farmer in twenty is able to name correctly all the fruit he grows. I have often heard bitter and loud complaints from exhibitors against judges, charging them with partiality and incompetence because their "extra fine" specimens were awarded no premium, while in the same class entries of inferior fruit took all the prizes, simply because the exhibitor in the latter case complied with the prize list in naming his fruit correctly, while the former did not.

At an exhibition last fall, where I was requested to act as judge, I could not, according to the prize list, award a single prize in "collections," although there were seven entries. This state of affairs is very annoying and unsatisfactory to judges as well as exhibitors, and has been a fruitful source of strife and contention, causing a rapid falling off of the number of fruit exhibits from year to year in many of our local shows.

To remedy this, all fruit growers, and exhibitors especially, should see that they know by name what they grow, and in cases of doubt should refer to their nearest authority in this line, or, do as I have done, send a sample peck or half bushel (express charges prepaid) to our obliging President, who is said to be the *best authority in the Province.* I submit this, believing that all who know him will confirm the statements herein contained.

Seedling Peach Trees.—Mr. J. B. Pierce maintains before the Horticultural Association of Pennsylvania that it pays best in cold sections to plant seedling peach trees, because they are hardier than budded kinds.

Our experience does not bear this out. We have over 2,000 budded and several hundred seedling peach trees in our orchard, and we get crops as often from such budded kinds as Early Purple, Hale's Early, Alexander and Louise, as from the seedlings; and when there does occur a full crop seedlings are unsalable. Other kinds are more tender, as, for instance, Early and Late Crawford, Old Mixon, Smock, &c. If we had any peach trees native to our climate it would be well to endeavour to improve them by extended experiment, and perhaps our Experiment Station may further acclimatize some of the hardier varieties; but to advise any fruit grower to plant an orchard of natural fruit, in these days of improved varieties, is absurd.

CONDENSED REPORTS OF FRUIT.

BRIGHTON, MOORE'S EARLY AND WORDEN GRAPES.—Mr. J. B. Burk, Brougham, writes:—My Brighton and Moore's Early fruited last year. The fruit of the former is delicious, much superior to Moore's Early, and about one week later. No grape pleases me so well as the Worden. It is a heavy cropper, and it ripens soon after Moore's Early, about the first or second week in September. The quality is superior to the Concord. True, its fruit drops if allowed to hang too long, but if picked as soon as it is ripe it will cling to the stem as well as the Concord.

THE DUCHESS OF OLDENBURGH.—Mr. S. Roy, Berlin, sends a photograph of one of his trees of this variety, borne down with an enormous crop of ripening fruit; but which he thinks has now borne to its last crop. He says:—

"This variety of apple has paid me better than any other in my collection, which embraces some fifty varieties.

The Duchess is apparently not destined to be a long liver in our climate; it is too precocious for that. My experience with it would limit it to about thirty years. The trees are rather on the small side, and can be grown without crowding about twenty feet apart.

I notice further that when budded on the common stock it is very apt to sucker, but when root-grafted it is free from this fault.

This apple, the Yellow Transparent and the Tetofsky belong to an entirely distinct type of the Malus from any other in general cultivation, and are botanically assimilated to the Siberian Crab *(Malus Baccata)*, of which those indigenous to Southern Europe are only sub-varieties.

The Alexander is called a Russian apple, but has no botanical affinity to those previously mentioned. It is evidently of west of Europe origin."

SMALL FRUITS IN BRANT AND OXFORD.

Mr. S. Cornwell, Sec. of the Small Fruit Growers Association, of Brant and Oxford, sends us an extended report of their January meeting, clipped from the *Norwich Gazette.*

Mr. Barnes *maintained that the business was profitable* and referred to Mr. S. Cornwell's sales of $900 worth of small fruits in a single season. In order to get the same amount of profit that there would be in these operations, in other lines such as grain and other produce, a pile of hard labor would have to be invested.

Mr. Charlton—Will Mr. Cornwell tell us how he made $900 out of small fruit that year?

Mr. S. Cornwell—The figure stated is the total price received; the cost of picking has to be taken out of that. My berries sold at 8 cents; I paid 1c. per quart for picking; and I had three acres bearing. I never had as good crops or prices as that year.

Mr. Chas. Grantham, of Cainsville—I think it is a great mistake to raise on the price of picking to a cent and a quarter.

The Chairman—Yes, those who sell for five cents and give two cents for picking can't be very anxious to make a profit. I had no difficulty in getting pickers at one cent. I had to turn off about half of those who applied for work at that price. All my adult pickers averaged from $1.50 to $1.75 per day, and fourteen year old boys and girls earned from 80c. to $1 per day, with two or three hours rest each day at noon.

Mr. Charlton—I think it is well enough when, like Mr. Cornwell, one can get $900 for the crop and 8 cents per quart for berries; but many last year sold for three cents. I think that strawberry growing, as generally practised, does not pay. To sell at 3 cents and pay 2 cents for picking was hardly encouraging.

Mr. W. H. Lee, of Cainsville—That sort of thing comes from raising poor fruit, and poor fruit is going to come behind every time, and the further behind it gets the better for the careful grower. It pays to raise good fruit.

The Chairman—There are two men losing to every one who makes, taking large and small together.

Under the head of *Culture of Strawberries*, Mr. D. M. Lee said: In the preparation of land the following precautions might be used to advantage: Choose land that is not too light; strawberries thrive best on heavier soil; his crop was the best in Ontario last year and was grown on clayey ground, almost sticky. Prepare the ground thoroughly; seeds and roots will bother the plant-growth; corn or

roots grown on the ground the year before planting berries will help the ground; the ground should be worked late in the fall, as late as possible; that is one of the secrets of success.

With regard to *varieties* Mr. Grantham said he could do better with the Crescent than with any other kind. The Manchesters were larger, and when the others were small and dying out they extended the season considerably.

The Chairman — If we grow the Crescents as extensively as the Wilson it will kill the market, being a poorer berry and of a light color. The buyers are asking for a darker berry even now.

Mr. W. H. Lee—Had a seedling to introduce shortly, coming between the Sharpless and Crescent Seedling.

Mr. Cornwell—Had found that the James Vick on good rich soil was as large and firm as the Wilson.

Another gentleman spoke in favor of the James Vick for fertilizing.

The next subject was the "*Culture of Raspberries*"—*best modes of cultivating, and best varieties.*

Mr. W. Lee spoke for half-an-hour or so on the subject, giving some excellent practical advice based upon his own experiences as a successful grower. The soil must, he remarked, be good strong dry loam, flat land fairly dry, or well drained. The soil must be prepared as carefully as for the strawberry. The raspberry could be grown successfully for ten years in certain varieties, and could sometimes be cultivated successfully in hills. As to the varieties, the Marlboro' was undoubtedly the best early berry, though it laps too close on the end of the strawberry season. For a fine late berry he would recommend the Cuthbert. The color was against the Philadelphia, and that variety had stood the wear and tear as long as it would. Of course he was getting a little shy of raspberry-growing as compared with strawberries. He recommended planting them at distances of eight feet one way and four feet the other.

Before adjourning it was resolved that the price for picking strawberries should be one cent per quart and no more.

OPEN LETTERS.

The Alexander Apple.—Mr. R. Brodie, St. Henry, P.Q., writes:—We generally sell our Alexanders as soon as they are well colored in the fall, as we get a good price, averaging $3 per barrel, for them, and no risk in keeping them. This has been a remarkable season for keeping fall apples. I have Plumb's Cider and a few Alexanders in my cellar at the present time (Jan. 29).

Paris Green.—Mr. Dickson, Parkhill, writes that by using too strong a solution the leaves were wilted off his apple trees. In our experience three ounces to 40 gallons of water is quite sufficient.

The Yellow Transparent.—Dr. Hoskins, a famous fruit grower of Vermont, writes: "I note your *beautiful* picture and *correct* description of the Yellow Transparent apple, but wish to correct the *great error* (in the quotation from the proceedings of the Michigan Pomological Society) that it is the same as the White Astrachan, a later, much inferior apple, and very unproductive."

The Wilson Strawberry.—Mr. J. P. Cockburn, Gravenhurst, writes as follows:—"With reference to Mr. Morden's remark about the Wilson Strawberry, I think it wise of the Wilson "to give up the idea of running" when there are so many better candidates in the field. For a general crop on medium to light soil, vote for Crescent, Manchester, Miner, and Glendale; for fancy crop, Early Canada and Sharpless. These will furnish a continuous crop of first-class berries all through the season, with the advantage of the plants with-

standing more rough usage than any other sort."

Temporary Wind-Break.—SIR: In sending in my subscription to your valuable publication, which I notice is improving in many ways, I enclose a description of a temporary wind-break, which I put through my Niagara grape vines this fall to ward off strong northern and western winds. We cut and drew several loads of young pines, which we got from a neighbor who was about to clear a pinery. These bushes, ranging from 6 to 10, or more, feet in height, were placed up against the trellis and wound fast with one strand of stove pipe wire, placing them close enough to form a hedge. Several rows were run through, one about every third trellis, where the vines were too large to lay down. The posts in the trellis are about 30 feet apart. About every other space we put a brace, by using two light posts fastened across one another near their upper end, the fastening being just under the top wires of the trellis, This mode is the best and cheapest wind-break I could think of for this season, but for a permanency I have other methods in view.

R. POSTANS, Oakville, Ont.

Important Questions.—SIR: I like the January Number very much. Mr. Simmers article on the culture of flowers is especially interesting. What to plant, how to plant, and how to prune, are questions that many are asking in rural districts. It must be confessed, the farmers wives and daughters are really the only ones that are interested in the garden, (the farmer and his sons giving all their interest and attention to the farm and stock,) and it is wonderful how well many of them succeed in raising fine vegetables and small fruits, and in surrounding their homes with flowers.

F. FOYSTON, Minesing, Ont.

Elliot's Early Pear.—SIR: I am glad to find a good word in your last issue in favor of the Elliot's Early pear. Some six years ago, I ripened it at Sault St. Marie, Algoma, in the fore part of August, although afterwards the tree blistered and died.

Is the Jessie strawberry now in the market?

P. D. LAURENT, Lindsay.

[NOTE.—The Jessie is advertised in our columns.—ED.]

TIMELY HINTS FOR THE ORCHARD.

PRUNING.

The first mild weather is the favorite time with most farmers for pruning. This work is frequently overdone, and we often see permanent injury inflicted, by lopping off the large limbs and leaving great ugly wounds which never can heal over. By such cruel treatment many orchards are hastened into premature old age. We have an old veteran apple tree, a hundred years of age, and still in good bearing condition. It was a sweet kind, and therefore pruning was neglected, while many others, of better varieties, were pruned to death. We advise, then, to prune the *apple and pear* as little as possible, consistent with the necessity of removing all superfluous limbs which cross, and always to choose the smaller when one of two must be removed. Cut close to the main branch, so that the bark may close over the wound.

Dwarf Pears need to have the new growth thinned out, and judiciously cut back, in order to produce fine-sized fruit. The pyramidal form is best for a dwarf pear tree.

The *Cherry Trees* will need very little, if any, pruning. Broken boughs and dead limbs, however, should be carefully removed.

The *Peach Tree* will require considerable attention. It is our custom at this season to go over them with a pair of tree-pruning shears, removing all dead

A GROUP OF FLOWERING BULBS.

wood, and cutting back a considerable portion of the new growth. For the higher limbs a Water's tree-pruner is most serviceable.

Pruning the *Grape* is necessary to fruitfulness, and the pruning shears must be used freely. The work is better done after the fall of the leaf in the autumn; but, if left until now, must be done as early as possible before the active circulation of sap begins.

The *Currant Bushes* need shortening in and thinning out both, if fine-sized fruit is desired. Under the common system of neglect it is strange that currants are so abundant. They stand more abuse than any other fruit.

The *Gooseberry Bushes* must be thinned out but not shortened in. One-half the old branches may be removed.

All this work should be done in March or early in April, lest in the push of spring planting and summer harvesting it be neglected altogether.

Flowers.

WINTER FLOWERING BULBS.

BY HERMANN SIMMERS, TORONTO.

At this season of the year when the various Dutch and Cape bulbs have completed their growth, it would be well to give a few practical hints as to their after care. The best possible example that we can take is the Hyacinth, as all other bulbs need similar treatment. As soon as the bulbs have finished their bloom, cut the faded flower stalk off, about two inches above the top of the bulb; then allow them to remain in this condition for about two weeks, after which take the bulb out of the pot or glass, or whatever receptacle they may have been grown in, and cut the green leaves off the same height from the bulb as the flower-stalk has been cut off. The bulbs should then be put in a warm, dry place, with

the roots still adhering, which, when dry, may easily be rubbed off, leaving the bulbs in the same sound condition as when first planted. There are several modes of keeping the bulbs until the fall, and either of the following ways are thoroughly practicable, and are recommended to the amateur. The first plan and probably the best is to plant the bulbs that have been dried about seven inches below the surface of the ground as soon as the weather will permit in the spring, in any out-of-the-way place; as when so planted

they do not make one particle of growth, and are only being prepared for planting at their proper season, for winter blooming. The next mode, a very simple one, is to tie them up in a bag, and hang them in a dry place in the cellar, avoiding dampness, which causes decay.

CHINESE CHRYSANTHEMUM.

THE CHRYSANTHEMUM CRAZE is not on the wane. At least Peter Henderson, a noted florist, declares in *Popular Gardening* that the opposite is the case. He thinks it has come to stay for many years. He says further: "No plant is so easy of culture; in no family of plants have we such variety of contrasting colours, or such symmetry and yet eccentricity of form. It comes in a season when nearly all other flowers are gone; it is hardy, so that it can be grown by the most humble owner of a cottage, yet gorgeous enough to make splendid the conservatory or the drawing room."

By favor of Mr. Vick we present a cut of Japanese Chrysanthemums. And for contrast we show also a cut of a Chinese variety. It will be observed that both are large, loose graceful flowers, but that the former is more ragged or fringe like in habit than the latter.

We cannot better introduce this flower to those who are thus far unacquainted with it, than by giving the following condensed report of Dr. T. Sterry Hunt's remarks on this flower, in his address on flowers before the Montreal Horticultural Society, last March:

"And first about Chrysanthemums. To many people, the name is comparatively new, and the flower itself is new. He had been surprised to see how few are cultivated in Canada. That, however, is due in part to the conditions of climate. All present knew the family

of this flower and its character. We speak of this flower something like an Aster, as a Chrysanthemum; it is really a Pyrethrum. It is one of the Composite flowers. The Chrysanthemum we cultivate the most, is one that comes from China. This flower was for a long time cultivated in India and China, and in New England it was known as "the India plant." The story he had heard as a boy, as to the manner of their introduction, was to the effect that they were brought out from India by some sea-captain. And, doubtless, that was their history. They are highly prized in India; they are plants that will flower for a long time on ship-board, and they are easy to transport. These Chrysanthemums have been greatly varied by cultivation. The Chinese and Japanese have from time immemorial vied with each other in the production of new varieties. Nowhere has the florist's art and careful selection been carried to such a pitch of perfection as in China, or, still more, Japan. The Japanese are our masters in that, as in so many elegant arts. The Japanese attach a special importance to the Chrysanthemum. It is to them a sacred flower. It has a peculiar religious symbolism. Its fragrant odor; the freedom with which it flowers; the ease with which it is cultivated, have given it prominence among these people of the East. We have three or four different types. They are of every possible color but pure blue, and are often beautifully shaded with two or three tints; one colors at the tip, one at the base, one on the upper side, and another on the lower side; there is infinite variety in this one little flower. Extremely hardy and very easy in cultivation, they do not stand our winters, and cannot be made to blossom here in the open air. In Rhode Island, or in Connecticut, they bloom in November, and even in early December, in the open. Here we cultivate them in pots and bring them to bloom in the house. The propagation is simple: It is a little, woody, shrubby plant, easily propagated, and running up some four, five or six feet in height, and is laden with flowers in the late autumn and early winter. They are very fragrant, and keep their beauty for a long time on the plant, and after they are gathered. When the plant has done its work of flowering, you cut it down the ground, and put the root in a place where there is not too much moisture all the winter, and in the spring, the root torn asunder, will give you a great many plants. Compartively few take the trouble to grow them from seed; you may get something that is more beautiful, but the result is uncertain, and you rather trust to friends for cuttings of approved varieties."

FLORICULTURAL.

Sowing Seeds.—Wm. Falconer, in *Rural New Yorker*, advises early sowing of the following flower seeds, among others, in order to have fine plants for transplanting in May, viz.: lobelia, tuberous rooted begonia, cockscomb, verbena, snapdragon, petunia, stocks, canna, abuilton, pansy and chrysanthemum. Lacking a hot-bed, seed pots may be used, half-filled with drainage, and balance with mellow, light, sandy soil. Scatter fine earth over the seeds, just enough to cover them, giving very little water. The pots should be placed on the window sill, away from bright sunshine, and a bit of stiff paper laid over them, but tilted up about one-fourth of an inch at one side. On germination of the seeds, the paper should be removed. The Chinese and Japanese chrysanthemums are so copious and gay in November, and so easily raised from seeds that we should all try a few.

Vegetables.

CELERY.

How to Grow and Keep It in the North.

BY A. A. WRIGHT, RENFREW.

How many readers of the *Horticulturist* have at this season of the year an abundant suppy of beautiful, crisp, ivory-like celery? It is so healthful and in the winter season especially, such a desirable relish, that it seems strange it so rarely appears upon our tables.

It is easily grown. Sow your seed in the hot-bed—in this locality—about the 1st of April. It will not come up the same day nor the same week, but if kept warm and damp will come along in good time. Neither will it astonish you with its wonderfully rapid growth, for at first it is a slow grower. When about an inch high the plants, should be removed to another portion of the hot-bed, and there left until they have attained a considerable size, when they are ready for planting in the place they are to occupy in the garden. Having previously enriched and prepared the ground, by deep spading, I dig out a trench about five or six inches deep and as wide as the spade, throwing the earth to both sides of the trench. I may mention also that you need not fear having your ground too rich, or too loose and mellow.

The plants are now taken from the hot-bed and planted in your trench, setting them about six inches apart. This being done, place little pieces of sticks across your trenches say five or six feet apart, and on these cross pieces lay inch boards, say ten or twelve inches wide, and any length. These will make an excellent shade for your plants, and can be easily removed when you are watering them, which should be kept up for some time after planting, unless you have rain, when of course it will not be required. As your plants grow, the earth should be drawn about them with one hand, while with the other the stalks are held together, to prevent the earth from getting in between, and injuring them. This earthing up should be continued from time to time until the plants are fully grown, care being taken that it is done only when the earth and plants are dry to prevent rusting of the stalks. Your plants being fully grown the next step will be storing for winter.

For this purpose I take boxes about four feet long, a foot wide, and, say eighteen inches high. The ordinary boot and shoe boxes are admirable for this purpose.

Having procured one which is tolerably sound, if the top has been replaced you take it off, as you have no use for that. You next turn it on its side. Then take a straight-edged board and with your pencil draw a line lengthwise of your box, and about three inches from the bottom of it. Now take your rip saw, and saw the side of your box through from end to end on this line. If the board that you have just sawn was six inches wide, you will remove the upper three-inch strip. Next take your cross cut saw and saw your end boards in, about three inches, and in a line with your previous cut with the rip saw. This done, make another cut with your saw in your end boards reaching from the bottom of the remaining top side-board of your box to where your last cut ended, and remove the V shaped piece from the end. Now do the same thing with the other end. You next take the three-inch strip you had previously taken from the side, and place it back again. The top of it will now be in line with the side of the box, but the

bottom will extend in, leaving a two-inch space the whole length of your box, which space you will use for pouring in water to supply moisture to your plants. Now, take your box to your celery-bed, and cover the bottom with two inches of earth, and in this earth plant your celery as closely as possible. This should be done on a dry day. The box, with its contents, can now be removed to your cellar, when, for the present, your work is done.

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WHITE PLUME CELERY.

From time to time as your plants need—which is pretty often—you will supply them with water, and always through the open slit in the side of your box, never by the top, as it would rot your plants.

Treated in this way you can always get at your plants, without any trouble, and you can see at any time the exact condition that they are in.

One word as to varieties. I have now discarded the Boston Market and other old standard sorts, and grow only the White Plume, as it blanches so much earlier, is so crisp and tender, and strange to say, with me it keeps in the way I have described, longer than any of the older sorts. In this last respect my experience seems to differ from nearly every writer whose articles on celery I have chanced to see, as all state that the White Plume is the poorest keeper of any.

It may be that, if kept in some other way, it would prove the poorest keeper, but kept in the manner I have described I have found it to have no equal.

THE ONION.

Draw off his satin waistcoat,
  Tear his silk shirt apart,
And, weeping tears of pleasure,
  Creep closer to his heart!

Wrapt is this modern mummy
  In ceaseless fold on fold;
Yet what a wondrous power
  Those endless wrappings hold!

Of all the vegetables
  From garden's length to length,
He is the one most mighty—
  Epitome of strength.

Whene'er his person enters,
  All noses snuff the air,
And epicurean stomachs
  For gastric treats prepare.

A subtle spirit rises
  Of dinner in full bloom,
An appetising odor
  Pervading all the room.

When at the well-laid table
  How is the palate blest!
He betters other dishes,
  Yet is himself the best.

But call upon your lady—
  Why is her smile so grim?
Before a word is spoken
  She knows you've been with him!

—*Boston Transcript.*

They were at a dinner party, and he remarked that he supposed she was fond of ethnology. She said she was, but she was not very well, and the doctor had told her not to eat anything for dessert but oranges.

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 premium 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 concerning 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.

Patience on the part of our subscribers will favour us. Owing to great amount of mail matter coming in just now, it is impossible to change the address label the first month after it is received in every case. There need be no anxiety, therefore, respecting safety of enclosures until after the second month from time of sending.

Subscribers receiving March Number, and not returning the same, will be counted members for 1887, but no premiums or Report can be sent them until their dues for the year are paid.

Not a Nurseryman.—The Editor of this Journal is not a nurseryman, but a practical fruit grower. He has had some years experience in the nursery business, but during the past ten years has devoted every acre of his ground to fruit culture. He has no interest in or connection with any nursery; but, on the other hand, will endeavour to protect the fruit grower against humbugs, whether introduced by a nurseryman or by any one else. At the same time it will be his object to keep the readers posted concerning all new fruits, and to commend those which are valuable so soon as their reputation is fully established.

Contributors should remember that four or five hundred words are enough for any ordinary article. We have received one that approaches the thousands, and would require a special number of our *Horticulturist*. Lengthy articles, though valuable, sometimes have to wait a long time before we can find space for them.

The Annual Report for the year 1886 will be in the hands of the members of the Association very soon. We regret its unusually small size, the result of the employment of an incompetent substitute in place of our usual reporter. Whole pages had to be erased owing to the wretched work of this man, and what remains was mostly re-written by the Secretary.

Such a mistake will not be repeated, as a thoroughly competent official re-

porter has been engaged for the year 1887.

The Winter Meeting at Chatham was a most interesting one. Valuable papers were contributed by the following gentlemen, viz.:—A. M. Smith, St. Catharines; B. Gott, Arkona; John Croil, Aultsville; S. P. Morse, Milton; F. W. Wilson, Chatham; P. E. Bucke, Ottawa. Also most interesting addresses were delivered on various topics by his Worship the Mayor of Chatham; T. T. Lyon, President of the Michigan Pomological Society; Wm. Saunders, Director of the Experimental Farm Stations of the Dominion; Prof. H. Panton, of Guelph Agricultural College; A. McD. Allan, President of the Association; P. C. Dempsey, of Trenton, and others. But as our readers will receive all this, verbatim, in the Report for 1887, we need not occupy these pages with even a summary of the proceedings.

Such meetings as these, held as they are in various portions of Ontario, serve to disseminate knowledge of fruit culture far and wide, and never fail to very largely increase the local interest in the work of our Association.

The appointment of the place for the *Summer Meeting* has been left in the hands of the Executive Committee.

Thanks.—Again we thank the members of the Association for the many kind letters of congratulation concerning the improvement in the *Canadian Horticulturist.* We again ask that this appreciation manifest itself in helping us to double the circulation, and thus increase the usefulness of the Fruit Growers' Association of Ontario.

An Indiana Correspondent thinks "there is no danger of our communication with the United States being cut off this year." Certainly not, if the horticultural fraternity can prevent it. We recognise neither political parties nor national boundaries; and since our business is with the land and not the sea, we can afford reciprocity in horticultural information, undisturbed by the quarrels of a few fishermen.

Acknowledgment.—The cuts of Flowering Bulbs and of White Plume Celery in this issue were kindly furnished by Messrs. J. A. Simmers & Co., J. A. Bruce & Co., respectively, by request.

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.

16. Yellow Transparent.—*Where can I buy the trees?* [E. R., Stratford.]

Write to any of the nurserymen who advertise in this journal for information.

17. A Rosary.—*What is the proper distance to plant Hybrid Perpetual Roses in making a Rosary?* [F. F.]

Mr. Wellington, Toronto, writes:—The proper distance to plant Hybrid Perpetual Roses is, for strong growing varieties, three feet apart; for those of weaker habits, one to two feet.

18. The Wealthy Apple.—*Has the Wealthy Apple the defect of dropping off the tree before being ripe, and is it easily shaken off by winds?* [F. F.]

A. A. Wright, of Renfrew, writes:—We have never been troubled with the Wealthy dropping its fruit prematurely, as the Tetofsky does. Neither is it easily shaken off by the wind. We find it, so far, one of the very best apples we have for our cold northern climate. I sent several boxes from here to the Intercolonial.

19. Gooseberry Bushes.—*Will they do well under a wide-spreading tree? Do*

you recommend root pruning in the spring? [R., Toronto.]

The only reason for planting them under a tree that we know of is for lack of any open ground; for, grown under a tree, the fruit will likely be small and mouldy. The gooseberry likes moist soil and plenty of manure with high cultivation.

As to pruning, it is necessary to thin out the *top* every fall or spring to nearly one-half, especially the old wood, but we see no use of root pruning.

20. Grafting.—*Please state the time for cutting scions, time for grafting, and way to make best grafting wax.* [A. C. McDonald, Dunlop.]

Scions grow better if cut a good while before they are wanted, because they should be in a dormant conditoin when used. They may be cut early in spring, or they may be cut in the autumn, and packed away in fine dry soil or sawdust until needed. It is not good to cut them when frozen.

The grafting may be performed until quite late in the spring. Indeed, a neighbour of ours was top-grafting last spring until the leaves came out, and yet succeeded.

Grafting wax is usually made by melting together equal parts of tallow, beeswax and resin; or a little more of the tallow to make it easier worked.

Another good mixture is: Linseed oil, 1 pint; beeswax, 1 pound, and resin, 6 pounds.

21. Wind-Break.—*How far from an orchard should a wind-break of Spruce or Lombardy Poplar be planted?* [F. F.]

Mr. Thos. Beall replies:—"If spruce trees are planted at the same time as the orchard, they should be planted as far from the nearest row of trees as the rows are from each other. No injury will result for forty or fifty years. Lombardy Poplar is the worst tree I know of for that purpose, and therefore should never be used."

[The Catalpa Speciosa is highly spoken of for this purpose, and is quite hardy.—Ed.]

22. Half-Standard Apples.—*Would trees branching about two feet high be better than Standards for this section?* [H. E., Napanee.]

Yes, if you can manage the cultivation. A low head is a great protection to the trunk from the scorching rays of the sun. No doubt the best way to obtain them would be by topping off two-year-olds at the desired height.

23. Spot-Free Apples.—*Please give me a list.* [H. E.]

Yellow Transparent, Red Astracan, Duchess of Oldenburgh, Gravenstein, Wealthy, Ribston, King, Mann, Golden Russet, and others. Of these the Transparent, Duchess, Ribston, Mann and Russet are, we believe, absolutely free.

Scientific.

CANADIAN PHOSPHATES.

P. G. BUCKE, OTTAWA.

The following paper is principally taken from a most exhaustive and admirable essay on the phosphate beds of the world, read by H. B. Small, Department of Agriculture, Ottawa, before the Hamilton Association last summer:—

A short review of the phosphate fields of Canada may not be uninteresting to the readers of the *Horticulturist*, especially when we consider that the above ingredient is essential to all living tissues, whether vegetable or animal. This substance is repeatedly passing through its three great changes; it is found in the soil, from which it enters into the composition of plants, from them it is absorbed into animals, and again deposited in the soil to pass

through the same cycle. This, however, is broken by the dense population of cities, when the phosphates, instead of passing again into the land, are lost by our present defective method of getting rid of city sewerage. A good deal of phosphate is also lost to this country by the shipment of cattle and grain to distant markets by sea and land, and hence the desirability of building up the waste thus made from the natural beds found in various parts of the world. Fortunately for Canada she has the richest and apparently the largest deposits which have yet been discovered on the face of the globe.

The first of these deposits was discovered by the late Mr. Vennor of the Geological Staff, also known to fame as a weather prophet, in 1871, in the County of Hastings. This area was subsequently much enlarged, specimens were found throughout the entire district lying back of the city of Kingston, and mining is still, to some extent, being carried on there.

It is in the Laurentian range of the Province of Quebec, and more especially, as far as has yet been discovered, in that part lying in the townships of Buckingham, Templeton, Wakefield, Hull, Derry, Portland and Bowman, that mining is chiefly being prosecuted, and more especially in the two first named townships. The question of the continuity of these deposits was at one time doubted, but later tests which have been made by means of the best mining appliances, such as steam hoists and drills, have shown that at the depth of three hundred feet the phosphate is of a higher grade, whilst the deposits are more extended. These discoveries go to show that our Quebec beds are practically inexhaustible.

These mines have a great advantage as being situated in contiguity to navigable water, the Lievres River, which is deep and sluggish, where the mineral is placed on scows which are towed down by steam tugs, or are left to drift till they reach Buckingham village, situated on the Canada Pacific Railway. Hitherto most of our Canadian phosphates have been shipped to Liverpool by steamer from Montreal, where they have been treated with acid, and again distributed as superphosphates throughout Britain and Europe, a large percentage again finding its way across the Atlantic into the United States.

The grades shipped are known as firsts, seconds and thirds. The best is from 80 to 85 per cent., second-class 75 to 85 per cent., third-class below 75 per cent.

Phosphate is found in various forms, sometimes in crystals, at others in masses, varying from compact to coarse granular, in strata of a lamellar texture, and in a friable state called "sugar phosphate." The color varies from greenish to clear sea green, bluish, red, brown of different shades, yellow, white, and cream colored. Phosphate runs from twelve feet square to sixteen feet square to the ton, according to its compactness.

The old style of mining surface deposits has now been superseded by men of capital and powerful companies. These have introduced steam power and improved machinery, and by this means a higher grade of the mineral has been taken out at a less cost. This has placed mining operations on a more permanent basis. The actual cost of a ton of phosphates delivered in Liverpool is about five dollars, after paying all expenses for mining and freight. The price obtained in Liverpool ranges from twenty-six to twenty-eight dollars per ton, so that there is a large margin for profit. It is, however, only by a large outlay of capital that the above results are obtained. The first year's operations seldom leave a margin, owing to the heavy expense for plant

and buildings; but after the first year it is known that in the case of two companies now working a dividend of thirty per cent. was cleared and paid to the shareholders. One of the most successful mines is owned by a company having its headquarters in London, England. The property covers 1,200 acres. The profits for three years, 1882, 3 and 4, after defraying all expenses, paid a dividend of 25 per cent., leaving a balance of $10,000 as a reserve. Large forces of men are being employed in this industry, which is rapidly assuming considerable proportions. The out put for the past six years furnishes the following figures :—

1880....	7,500 tons.	1883....	17,160 tons.
1881 ...	10,307 "	1884....	20,461 "
1882....	15,556 "	1885....	24,876 "

Unfortunately pyrites, out of which sulphuric acid is made, is not at hand in sufficient quantities to supply works for treating the phosphates, and as most of the product of the mines is used in Britain, where acid is inexpensive, it pays better to ship the crude material. A wealthy American company has established a mill for grinding and pulverising phosphates, either for acid treatment, or for use in its pure state. These works are situated at the confluence of the Lievres with the Ottawa rivers. This mill has a capacity of fifty tons per day. The powder obtained is so fine that it is passed by means of fans through an 80 mesh bolt, thereby separating every particle of mica, which is the most troublesome material the refiners have to contend with. This flour of phosphate is shipped west to cities situated along Lake Erie. Very little of this material has hitherto been used in Canadian agriculture or horticulture, but as our soils become exhausted by the shipment of grains and cattle, the time cannot be far distant when this powerful fertilizer will be largely sought for, and these deposits which nature has bestowed with such a bountiful hand, will be thoroughly appreciated by the Canadian farmer and gardener.

Uses of Fruit.

Apples for Stock.—C. L. Underwood says in *Farm and Home* that he has been feeding apples for ten years past. He uses a peck of apples to two quarts of bran for his cows and finds it to increase the flow of milk and improve the quality of the butter.

Apple Butter.—Making Apple butter is almost one of the lost arts, but I have gathered the process from old experienced folks, and New York State farmers say that it is apples pared, cored, cut and boiled in sweet cider till the whole is a dark, rich pulp, and the cider is reduced one-half. No sugar is needed, for the fruit furnishes its own sweetness. Half the apples may be sour and half sweet, or all sweet, as one likes. It takes nearly two gallons of cider to make one of Apple butter, and spices are added, or not, to taste. I should spice it, the rule being one tablespoonful of cinnamon and one-third of a teaspoonful of ground cloves to each gallon of Apple butter, added when it is taken up, boiling hot. It may be kept in barrels, stone pots, or butter firkins and boxes. A clean second-hand butter firkin is a very good thing to keep many kinds of preserves or pickles in.—*Vick's Magazine for January.*

Baked Apples.—Are "a dainty dish to set before a king" if you bake them the right way. Take sour, sound apples and core but do not peel them. Fill the cavities with sugar and stick into each a clove, a bit of cinnamon or lemon peel as preferred. Put the apples into the oven with a little water in the bottom of the baking pan, and bake until a straw will pierce them. Eat cold with

cream. Pears served in the same way are even better than apples.

How to Cook Cranberries.—Wash one quart of cranberries and put them in a covered saucepan with one pint of water. Let them simmer until each cranberry bursts open ; remove the cover and add one pound of sugar, and let them all boil for twenty minutes without the cover. The cranberries must never be stirred from the time they are placed on the fire. Follow this recipe exactly, and you will have a most delicious preparation of cranberries.—*Toronto Globe.*

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.

Queen's College and University, Kingston, Canada, 1886-7. Containing full information concerning the course of this well-established seat of learning, and the series of examination papers of 1885-86.

The American Garden, 46 Dey St., New York City.

This well-known magazine has incorporated in itself the *Floral Cabinet*, and yet notwithstanding its increased excellence, is now reduced from $2 per annum to $1.

Massachusetts Horticultural Society. Schedule of Prizes for year 1887. Robert Manning, Boston, Secretary.

An attractive feature of the weekly meetings of this Society. Besides the special exhibitions, as that of spring flowering bulbs, in March, and of autumn fruits, in October, the Chrysanthemum show in November, there is a series of weekly exhibitions of flowers, and fruits in season, every Saturday, from July 2nd to Sept. 3rd.

The Fruit Grower, an eight page monthly containing much valuable information, published by The D. W. Beadle Nursery Co., St. Catharines, in the interests of their business. Edited by D. W. Beadle, so long and so favourably known as the editor of this journal.

The American Agriculturist published at 751 Broadway, New York City, bids fair to be as attractive for 1887 as ever. Its profuse illustrations render it a favorite with every member of the farmers household, from the oldest to the youngest.

The Horticultural Art Journal, published by Mensing & Stecher, Rochester, N. Y. is a gem in its line. It is got up in excellent taste and contains four colored plates in each number. The terms are $3.00 per year.

CATALOGUES.

J. A. Simmers' Illustrated and Descriptive Seed Catalogue and Cultivator's Guide for 1887. Toronto, 147 King Street East.

This is one of the most attractive of Canadian Seed Catalogues. It contains a colored plate of vegetables, and a complete set of illustrations, both of vegetables and flowers ; and altogether is an evidence of the enterprising spirit of the firm. The business is now in the hands of Messrs. Anton & Hermann Simmers, the latter of whom is kindly contributing such valuable articles to these columns.

John A. Bruce & Co.'s Annual Catalogue of Seeds for year 1887. Hamilton, Ont.

This is the Thirty-sixth Annual Edition, and is a familiar visitor to many a Canadian home. Bruce's seeds are well known to be thoroughly reliable.

Gregory's Annual Illustrated Retail Catalogue of Warranted Seeds, Vegetable, Flower, and Grain, grown and sold by Jas. J. N. Gregory, Marblehead, Mass., 1887.

Herein are described and illustrated a remarkably full list of novelties as well as standard varieties of vegetables, of which Mr. Gregory evidently makes a specialty. We commend his catalogue to the special notice of market gardeners and florists who want the newest introductions.

A. G. Hull's Descriptive Catalogue of Grape Vines and Small Fruit Plants, St. Catharines, Ont., 1887.

Certainly a very tidy pamphlet, and contains a list of the most approved and best tested varieties.

A. M. Smith's Catalogue and Price List of Fruit Trees, Grape Vines and Small Fruits, St. Catharines, Ont., 1887.

Mr. Smith is well known as a thoroughly reliable Nurseryman, and any one sending him an order will not be disappointed.

Steele Bros. Seed Annual, Toronto, 1887, Corner Front and Jarvis Streets.

An excellent Catalogue of eighty pages.

A. C. Nelles & Co.'s Descriptive Catalogue of Mohawk Valley Seeds. 1887. 64 Cortlandt St., New York City.

Joseph Harris Seed Co.'s Illustrated Catalogue. 1887. Moreton Farm, Rochester, N.Y.

Joseph Harris is well known everywhere through his "Walks and Talks" in the *American Agriculturist.* His catalogue of vegetable and flower seeds overflows with the most useful and practical information, and is a valuable handbook for that reason alone.

The Folding Sawing Machine Co. send us an illustrated Catalogue and Price List of their useful machine. Their Canadian factory is at Essex Centre, Ont.

The Waters Stock Farm send us Catalogue of thorough bred trotting horses, each with complete pedigree, and careful description. The address is Genoa Junction, Wis.

CIRCULARS.

John B. Moore & Son, Concord, Mass., sends us a Circular concerning his new seedling black grape, the "Eaton," with a large cut of the same, showing a cluster measuring 4 x 8 inches. They claim that it is larger and earlier than its parent, the Concord.

Alex. Begg sends a Circular concerning a Canadian Exchange in London, Eng., which he establishing. This will be of great service to Canadians visiting England, who will thus find a common cenare to meet business friends and acquaintances, and for obtaining all needed information. Canadian office, Room 19, Corn Exchange, St. Sacrament Street, Montreal.

Humorous.

Two Students ring a hated professor's bell at midnight. He puts his head out of the window and wants to know what's up. "One of your windows is wide open." "Where?" exclaims the startled professor. "The one you are looking out of."—*Fliegende Blatter.*

A Swiss Law compels every newly-married couple to plant trees shortly after the ceremony of marriage. The pine and the weeping willow are prescribed, but the birch is allowed as being prospectively useful.

Mrs. Greene: "Timothy, what have you done with the letter that was lying on the bureau?" Timothy: "I put it into the letter-box, ma'm." Mrs. G.: "Oh! provoking! Didn't you see there was no address on the envelope?" Timothy: "Yes, ma'm; but I thought you didn't want nobody to know who you was writin' to."—*Life.*

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As hardy as the hardiest, large as the largest, surpassed in productiveness, a strong grower, good quality and very early.

The Canadian Horticulturist.

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Fruits.

BLACKBERRIES, NEW AND OLD.

THE BLACKBERRY has been for many years a favorite fruit for market purposes, with us at Grimsby; and, in seasons when the peach fails, it fills a most important place in the home fruit garden. But within the last few years, through the introduction of many hardy kinds, its culture has been so much extended that the profits have much diminished.

Previous to the year 1850, no cultivated varieties of the blackberry were known, but about this time the

DORCHESTER

was introduced by Captain Lovett, of Beverly, Mass. This variety was cultivated very successfully by Mr. C. M. Hovey of Boston, who claims to have grown the berries so large that 37 would fill a quart box. It is still considered a standard variety, Mr. Goff of Geneva placing it even before the Kittatinny. About the year 1854 the

LAWTON

was discovered near New Rochelle, N. Y., after which place it is sometimes called "The New Rochelle."

Our first experience in blackberry growing was with this variety, which had been brought into Canada by our old friend, Mr. A. M. Smith. It was a good grower, and bore good crops, but our great objection to it was its manner of ripening. It would color nicely, and yet conceal within a green, hard, sour core, which would cause a wry face upon any one who was goose enough to try to eat it; and if left till dead ripe, it was too soft to ship any distance. No wonder that the market for blackberries opened up for us very slowly, or that the brambles were soon

THE KITTATINNY.

banished from even the home garden, until the justly famed

KITTATINNY

appeared. We planted this variety near the south shore of Lake Ontario some twelve years ago, and notwithstanding the many introductions since, it remains so far our favorite. Hardier than the Lawton, ripening more evenly and thoroughly, of large and sometimes monstrous size, it is greedily bought up in the markets at an advanced price over such smaller kinds as Taylor or Snyder; while for home use, from the middle of August to the middle of September, we find it indispensable in the fruit garden.

From the South and West we read reports to the effect that this variety is there attacked by the blackberry fungus, or "rust," to such an extent as to render it worthless. So far, however, it has escaped this disease with us. North of the G. W. Division of the

THE EARLY HARVEST.

Grand Trunk Railway, however, the Kittatinny is too tender, and for our northern sections we recommend the

SNYDER

as one of the hardiest and most prolific of all. It is a native of Northern Indiana, and was introduced into general notice some ten years ago. Its extreme hardiness is plainly evident from its dark-green foliage and the vigorous growth of its stout canes.

Last summer, our bushes of this variety were a marvel to every visitor. he branches were literally loaded to the ground with their enormous weight of fruit, but alas ! the size—there was the rub, and there the disappointment.

Another small-sized blackberry, but a very desirable one, where it can be grown successfully, is the

EARLY HARVEST,

which is the very opposite in habit of growth to the Snyder. It is of a weakly habit, and as about as tender as the Kittatinny ; but it is the earliest of all blackberries, and on this account it is valuable for the market garden in favored localities.

THE MINNEWASKI.

And now that we have mentioned the more prominent of the well-tested varieties, we will refer to two or three new claimants for popular favor. The

ERIE.*

comes before our notice with the most extravagant claims. It is said to be as large as the Kittatinny; almost as early as the Early Harvest; as vigorous and hardy as the Snyder; free from rust, and of the very best quality.

This blackberry is a chance seedling, found some ten years ago in Northern Ohio, near the south shore of Lake Erie. It was first named "Uncle Tom," but at the suggestion of Pres. Wilder, the name was changed to "Erie."

If any one in Canada has given this berry a trial, we shall be glad to be favored with his experience.

Another new blackberry is the

MINNEWASKI.

It originated at Marlboro', N.Y., the home of the "Marlboro" raspberry, and is now offered for sale for the first time. It, too, is claimed to be perfectly hardy, a most abundant bearer, very early in

* See Frontispiece.

the season, excellent in quality, and large enough to rank with the Kittatinny.

THE GAINOR

is a Canadian seedling, first offered to the public in 1883. We have not fruited it, but is claimed to be larger than the Kittatinny, tender and sweet in quality, and perfectly hardy.

Of other varieties, such as Wilson, Brenton, Stayman, Stone, &c., we have not room to speak at present, except to say that we do not commend them as the best for our Canadian climate. And we have in this article mentioned old and new together, so that even the novice may not suppose that in introducing new friends, we in any way advise the hasty discarding of old and tried favorites.

RAMBLES AMONG FRUIT GROWERS.

THE WESTERN NEW YORK HORTICULTURAL SOCIETY.

(Concluded.)

MR. SNOW, of Yates County, N.Y., thought that

GRAPES

were the most profitable of fruits. From Cayuga Co. 800,000 baskets of grapes had been shipped this last season. The Concord had held its price better than the Catawba. Some one inquired about the benefit of *ringing the grape.* Mr. Barry said: "This is an old story, and a bad practice. The Massachusetts Horticultural Society has a rule that no grapes be allowed to compete on exhibitions that have been grown on girdled vines. The practice is condemned."

Prof. Goff, of the Geneva Experiment Station, read a paper on

POTATO CULTURE.

The result of careful experiment showed (1) that tubers from the most productive hills were the best for planting. The smallest tubers from the most productive hills produced more than the the largest tubers from the least productive hills, though, generally speaking, the large tubers produce better results than the smaller ones. (2) That large cuttings yield better than small ones, and whole tubers yield better than cuttings. (3) That dried cuttings yield better than fresh ones.

Mr. Willard, of Geneva, said the value of the

CHERRY

as a market crop was under-estimated. The Montmorency was one of the best varieties. "It will hang on the trees two weeks after it is ripe, and allow us plenty of time to gather it. My Montmorencys pay me as much as $10 per tree."

Mr. W. C. Barry said: "There is no cherry so valuable as the Montmorency. Wherever it has been planted, it has succeeded. According to Prof. Budd, it is as hardy as the Early Richmond. The crop, too, is uniform over the tree; and, when loaded with fruit, the tree is about as handsome as anything you could wish to look at. The fruit is also of a beautiful color, which it retains when it is canned. It is a little later than the Early Richmond in time of ripening."

Mr. D. M. Dunning, of Auburn, N. Y., read a very interesting paper on

ROSES.

He emphasized the need of *winter protection* even for the hardy varieties. They should be bent down and covered with evergreen boughs, or with something loose that would afford protection and yet allow free circulation of the air. This covering should not be removed until the frost is all out of the ground.

Roses need thorough *pruning* in the fall, by cutting out the old wood; and in the spring the young wood should be well cut back.

Cutting roses with long stems is a good practice, causing new growth to be formed, and on this new rose buds.

The best *place for roses* is in beds on

the lawn. They should receive a heavy coat of well rotted manure in the fall; and in the summer from the middle of May till the middle of June, liquid manure should be applied. This can easily be prepared by placing half a bushel of cow manure in a barrel of water. The liquid should be applied each evening.

Among other excellent varieties he mentioned the *M. P. Wilder* first. It has more points of excellence than any other, being beautiful in all stages of bloom and quite continuous. The *New England Hope* is a fine dark rose. *Baron Bonstetten* is rugged in constitution. Among light colored roses he would place *Victor Verdier* first, and of white roses he would class *Mabel Morrison* as the best. Of the Teas he thought the two most satisfactory were the *La France* and the *Capt. Christie.*

The next question considered was: "Is it true that

APPLES AND PEARS

are smaller and less perfect now than in early days?" Mr. Green thought they were, and the reason was because the native fertility had passed away, and insects and diseases had multiplied.

Mr. S. D. Willard thought that such specimens of apples, and particularly, such magnificent pears as President Barry had placed on the table, went to prove that those fruits were not degenerating. Never had such fine Beurre d'Anjou pears been exhibited there before.

President Barry said: "I think that what Mr. Green has stated is quite true. We are suffering from exhaustion of the soil, but it is also certainly true that we can grow as fine fruits now as ever we did, only the soil may require a little more manure now than formerly.

The cultivation which those pears received was not unusual. When my trees show the need of fertilizers they get it; perhaps once in two years. I don't think there ever was a time when pears could be cultivated with more ease than at present. There never was a time when we were so little troubled with pear blight as now. About thirty years ago we thought of giving up pear culture, owing to the blight; but, gentlemen, I think there is every encouragement now for fruit growers to extend the cultivation of the pear."

THE KIEFFER PEAR

was commended in the report from Ontario County as being an exception to the general failure of the pear crop the last season. Its fruit was perfect, and sold this season better than any other variety.

Mr. Green said the Kieffer pear had this year developed a better quality than was usual with it. It could really be eaten this season with some comfort.

Mr. J. J. Thomas read a very interesting paper on "*The Past, Present, and Future of Fruit Culture,*" which he concluded by showing that every farmer ought to have at least five acres of a

HOME FRUIT GARDEN

to supply his own family, leaving out altogether the question of the planting of an orchard for market purposes. And one department of our work for our pomological societies in the future was to diffuse a correct knowledge of fine varieties of fruit among our people generally, together with the best modes of cultivating and using it.

We were sorry to have come away before all the questions were discussed, but glad of the privilege of meeting so many experienced horticulturists, and of bringing away these scraps of information for the benefit of our readers.

THE CANADIAN TROPHY.

Having been favored with an excellent cut of the Canadian trophy, by Canada's High Commissioner in Eng-

THE CANADIAN TROPHY.

land, we take the first opportunity to give it room in these pages.

It will be observed that the view is from the opposite side to that which was shown on p. 4 of this volume.

In connection with this fine illustration the article by our worthy President on the benefits to be derived from the Colonial Exhibition, will be read with great interest.

THE PROSPECTIVE BENEFITS OF THE COLINDERIES.

BY ALEX. M'D. ALLAN, GODERICH, ONT.

If substantial permanent benefit is to be derived from the Canadian exhibit at the Colinderies, we should not not cease to perfect plans for successfully carrying out all that may be necessary in order to hold a market or establish more permanently, markets recently opened out to us. It has been clearly proven that by cold storage our early and soft fruits, especially apples, can be successfully shipped to the British markets. Is the matter going to drop at this? If not, what steps are to be taken to have a permanent line of cold storage established in one or more of our steamship lines? Now is the time to make preparation. I believe our Government should deal with the matter in negotiating; and intending shippers could give an idea early in the season as to the space each could occupy, and the length of time such space would be needed. All our early apples could be shipped successfully, and good prices realised, so long as a good, sample article only is shipped.

Then there other articles that can be profitably shipped. Table sweet corn in the cob, I feel sure, can be disposed of in large quantities; and it will carry admirably in cold storage. I would not advise the shipping of early pears and plums, as a rule. But if the markets in Britain are holding out a sufficient demand, owing to a generally short home and European crop, then these fruits can be shipped at remunerative prices. Our green flesh nutmeg melons would realize enormous prices in London and Liverpool. Grapes, if packed in convenient baskets, could be shipped so as to sell at prices that would pay the vineyardist. But the demand would be small at first, as our out-door grapes are not known on the British markets, and the people would not purchase them largely, until a taste were fairly established for them. In that country it is only the comparatively wealthy who can afford to eat grapes, the prices being beyond what any other class can afford. But as they can only grow grapes under glass, it will be readily seen that our open-air kinds can be grown and sent into these markets at a much lower price, so that a very large class of consumers who cannot afford to purchase such a luxury at the high prices charged for British hothouse grown grapes, would be glad to obtain ours at such prices as would amply pay both grower and shipper in Canada. But such a trade can only be established gradually, as the tastes of consumers are educated into a relish for our grapes.

As I will have regular advices by cable next season, of the prospects and state of the British fruit markets, it will give me pleasure to advise with intending shippers as to what to ship, and where, when, and to whom, as well as any other advice they may require; and I hope to hear often from many such through your columns. I would suggest that all intending shippers who can possibly do so, should attend our Fruit Growers' Association summer meeting for a conference upon points connected with the trade. I find that good results of the Colonial are showing themselves continually. By every mail I receive letters from British agriculturists who desire to

come to Canada and share in our advantages. Most of them have a few thousand dollars to invest, and generally give a preference to mixed farming and fruit growing. By last mail I have a letter from a gentleman in Brazil, who has a good capital, and will be in Toronto in July next, when I am to have ready for him a list of such farms as I suppose may suit his purpose for general farm crops, fruits and stock-raising.

Returning to the Colonial fruits. In future, should our Government desire to have Canadian fruits exhibited in British exhibitions—and I sincerely hope they will,—I would be in favor of exhibiting only fresh fruits in season. I found a very general feeling of unbelief as to the genuineness of our bottled specimens existed. I have often heard it remarked, that so far as the public was concerned, these specimen might as well be in wax, for very many believed them to be such, and many more doubted their genuineness. But when we placed the fresh specimens in plates upon the tables, all doubting was at an end. It paid Canada well to advertise in this way, and it would pay to keep up such an advertisement every season.

CANADIAN FRUITS AT THE COLONIAL.

SELECTED FROM THE REPORT OF THE FRUIT COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY, LORD RIVERS, CHAIRMAN.

The collection of hardy fruits exhibited by the Canadian Commission comprised an extensive collection of apples, pears, grapes, &c., from the provinces of Ontario, Columbia, Quebec, Nova Scotia, New Brunswick, &c.

Apples constituted the most prominent and important feature, and proved of much interest to the Committee, many of the samples shown being of large size, and extremely handsome in appearance, — the high coloration of many being especially remarkable and noteworthy,—greatly excelling, in this respect, the same varieties grown in this country.

The collection of pears did not present such an attractive appearance. Some very fine samples were, however, shown of Beurre Clairgeau, Beurre Hardy, Beurre D'Anjou, Duchess, Flemish Beauty, Louise, Onondaga, &c.

Grapes made a conspicuous display; but of these, as dessert fruit, no opinion could be expressed—the peculiar foxy taste and gelatinous flesh belonging to the grapes of America, requiring some experience to discriminate. Some of Rogers' seedlings were remarked as both large and handsome.

FRUIT EXHIBITS AT THE COLINDERIES.

The Annual Meeting of the Nova Scotia Fruit Growers' Association was held at Wolfville, N. S., on the 19th and 20th of January. The principal feature of the morning session of the second day was the Secretary's Report on Fruit Exhibits at the Colonial Exhibition. Mr. Starr clearly pointed out how not only Nova Scotia but the whole of the provinces of the Dominion had been benefited by the grand display which had been made, how a greatly increased demand had been created for our fruits, and the way prepared by which new markets might be opened up for Canadian products in other European countries. Mr. Starr was followed by Professor Saunders, who explained the manner in which the multitude of varieties of fruits had been preserved for this exhibition, the many devices resorted to, and the great success which had attended the effort. By convincing evidence, he showed that the fruit display had done more towards removing the ill-founded prejudices existing in Europe against the climate of Canada than any measure ever before undertaken by this country, and expressed his strong convictions that

prominent among the many good results which would follow this effort, would be increased emigration of a most desirable character.

An Enormous Emigration of young men and tenant farmers to Canada is predicted for next year. A bright prospect is, to all appearances, opening up for the North-west. The Colonial Exhibition has been of incalculable benefit in making the country and its resources known to the English public. —*The National.*

HORTICULTURAL.

The Leconte Pear promises to be the great pear of the South, and is said to by the leading fruit interest in Georgia. It is a tremendous bearer and has to be well thinned out, under which treatment the average weight is about fourteen ounces.

It is easily grown from cuttings and may therefore be readily propagated by any one.

Success with Cherries.—A writer in the *Farm and Home* claims to have had great success with cherries, by giving the ground a good top dressing of salt, and then when the trees were in bloom, dusting them with slacked lime every four or five days till the fruit was set. He had no worms, or rotten fruit.

The Transparent Apple.—I got the Yellow Transparent among my premiums from the Association last spring. It has already grown about two feet. It is in clay loam. I think it will do well in this climate.

I find *The Horticulturist* a grand book, it contains so much that is useful, even if one does not go into horticulture. Besides, a person gets nearly the value of his money in presents; and the Report is worth a great deal.

H. Atkin, Middlesex Co.

The Ontario Apple.—My Ontario apple which was sent out by the Association, bore immensely last season. From the original tree and some grafts I had over a bushel of splendid apples.

The Horticulturist is improving very fast, and I would not like to be without it. Samuel Carr, Sarnia.

ON RAISING PLUM TREES FROM SEEDS AND MAKING SELECTIONS.

BY SIMON ROY, BERLIN.

In growing plum trees from seeds in order to obtain good varieties, it will be necessary to obtain pits from the best sorts that you can obtain.

Allow the plums to be thoroughly ripe before separation from the pulp, and prevent them from drying by covering with moist earth, until planted in the fall. After the ground is prepared, plant in a row, about one and one-half inches deep, and about three inches apart. If the soil is rather heavy it may be mixed with either coarse sand, swamp muck, or well decomposed manure, so as to allow the germs to break through the covering.

After about two years growth you will be able to make your selection, preferring those which have a *tame look about them*, a fine large leaf, and the stems and branches clean and devoid of thorns. Nature will strive to hold her own, many will revert to original conditions and will produce fruit not larger than the ordinary damson. Seedlings usually require some eight or ten years before bearing fruit, but fruit may be obtained sooner, if scions or buds are worked on our native wild plum.

In accordance with what I have stated, I have succeeded in growing a number of fair specimens of fruit, equal to any in general cultivation, but do not claim any superiority for them. They have hitherto resisted the black-knot epidemic and are apparently healthier and hardier.

Perhaps it may be of some import-

ance to know that the two oldest varieties of plums on my grounds which I planted some thirty years ago, which bore fruit last year, and look as if they will hold out some time yet, are of American origin, namely the Bolman's Washington, a native of New York City, and the Prince's Yellow Gage, a native of Long Island N. Y.

VITICULTURAL.

Grape Experience.—SIR,—With me last fall the *Prentiss*, *Worden* and *Pocklington* were worthless. The Worden ripened all its fruit, and some of the bunches were large. I took out my knife and cut off a fine bunch to carry it into the house, but by the time I had it cut off I had just four grapes left on the stem; they dropped so badly. I packed some to try the keeping qualities, and they all failed to be good for anything.

I have had good satisfaction with *Brighton.* I have them in good condition yet (Feb. 1) and expect to have them up to April. They are as fine yet as in November.

Has any reader of *The Horticulturist* experience with reference to the keeping qualities of the *Niagara* and *Empire State ?*

My *Jessica* proved a very poor keeper. The *Jefferson* and *Lady Washington* were worthless with me. I made a frame over my vines, which were full of very fine bunches of grapes, and covered them over with glass; but all to no purpose. I will either cut them down, or graft them.

J. B. WILLIAMS, Bloomfield.

Pruning the Grapevine. — A writer in *Popular Gardening* says that the pruner invariably finds that upon a thrifty, strong growing vine, the buds upon the medium-sized canes are swelled larger and stand out from the cane more prominently, than the buds upon the largest canes.

He has tried the experiment over and over, and this is the sum of his observation, that the medium canes are the ones that develop the best fruit buds, whenever the vines are strong.

Lady Grape. — President Lyon, of Michigan, said at Chatham that this grape should be introduced into every list of grapes for home use. It stands head and shoulders above anything else. Better have a medium crop and first quality than an enormous yield of inferior fruit.

Manuring the Grape.—The Government Committee in France, after several years' investigation of the manuring of the grape and the results of a series of experiments with potash manures, report strongly against nitrogenous manures, including stable manure, as being "more hurtful than useful," which accords with common practice, also that feeble grape-vines consume as much manure as vigorous vines.

Potash should enter into the composition of manures for grape-vines, the elements in the soil being generally in bad condition for assimilation; potash carries forward in some way with it the other fertilizing principles.

Potash from the root passes to the vine, to the leaves, then to the twigs, to arrive at last at the fruit, of which it favors the development. Its migration is comparable to those of the nitrogenized elements and phosphates.

The potash introduced through the root in the course of a season is not entirely consumed, since it is found after fructification, reserved in sufficient quantity, in the wood and in the twigs. —*Wine and Fruit Grower.*

Pruning Grapes.—Sir:—I see on page 7, January No., a correspondent advises pruning grapes in the spring and leads new beginners astray. It is too late to prune grapes when you un-

cover in the spring, as they will bleed. Prune in the fall before laying down (advice to new beginners; older ones can do as they please).

I also see a good deal of talk about aphis, green and black, on cherries and plums. I may say, all we ever did was to give them plenty of lime water with a garden engine, and it was effectual. We went over the trees once or twice while the growth was young.

D. CAMPBELL, London West, Ont.

Grapes near Guelph. — Professor Panton says in Bulletin VIII. that some ninety-six varieties have been tested on the grounds of the Agricultural College. The latitude is 43° 38′; height above level of lake Ontario, 858 feet; soil, clay loam. As a result of five years' experience he draws the following, among other conclusions:—

(*a*) Grape vines in this locality must be well sheltered with warm exposure, and grown in a warm well-drained soil, or little fruit will be secured.

(*b*) The Concord, known as the grape for the million, scarcely ripens with us before well into October, and then irregularly.

(*c*) A grape which does not ripen earlier than the Concord is of little use here.

(*d*) Our earliest seems to be Moore's Early, Champion, Lady and Massasoit.

(*e*) For flavor, hardiness and yield the following are to be commended: *Black*—Wilder, Worden, Moore, Concord, Barry. *Red*—Delaware, Brighton, Lindley, Agawam. *White*—Niagara, Lady, Martha.

OPEN LETTERS.

Appreciative. SIR:—A few years ago I knew really nothing of gardening; but I became a subscriber to your able little journal, and to it I am indebted for the little I know of small fruit raising in a small garden of a working man.

I drained my lot well, which is a heavy, stiff, blue clay. I supplied the land with a liberal supply of stable manure, also coal ashes to loosen up. I dissolved bones in two large barrels of wood ashes, spread the same among my currants and grapes; and on a hint received from your little journal, cut all the old wood out of my currants. The result is berries, the superior of which were not found in this county.

I would like to know the best and cheapest way to preserve grapes till Christmas.

D. NEILSON, St. Thomas.

[NOTE.—An excellent mode of keeping grapes in a nice, plump condition until Christmas, is to pack them between layers of cotton batten.—ED.]

Johnston's Sweet Raspberry. SIR:—In your remarks about Johnston's Sweet Raspberry, you say you are not acquainted with any one who has fruited it. For your information and others who, no doubt, when it is offered for sale, will be willing to test it, I may say that I have fruited it in a small way for two years. Both plants and fruits were all the introducer claims for it, with this addition; there are but few spines on the plants, which makes it easier for the pickers to get along among them.

JOHN LITTLE, Granton, Ont.

The Onion Maggot. SIR:—A friend showed me a copy of the *Canadian Horticulturist*, and I am so pleased with it that I wish to become a subscriber. I am particularly anxious to get some remedy for the maggot that destroys the onion.

A. B. FERRIER, Cheltenham.

[NOTE.—Experiment by soaking the seed in copperas, and by sowing salt, soda, ashes or coal-dust over the ground.]

Flowers.

THE CULTIVATION OF THE DAHLIA.

BY HERMANN SIMMERS, TORONTO, ONT.

MANY readers of *The Horticulturist* may not be aware that this is the proper month to look after the preparing of their Dahlia roots, in order to secure their early bloom, and its continuance until frost has spoilt its splendour. We will presume that amateurs have placed their roots away in the fall to be ready for their proper attention in the spring; and, on looking for them, will have found a very large number of tubers attached to the stem, which in some cases are hanging loosely. If any are found to be in such a condition, they may be cut off, as they are in no way beneficial to the plant.

If the roots then have been carefully wintered, they may be cut apart, into four or five divisions of one or two tubers each, care being taken that a certain portion of the stem, with an eye, is attached; after which they may be planted in a box, or better still, in a hot-bed, until the new stem grows 3 or 4 inches in length. This may probably take until the 1st of June, at which time they may safely be planted in the open ground. A word here before going into further details; many amateurs suppose that the larger the number of tubers that are attached to the root, the better they will grow; but not altogether so, as invariably the gardener cuts a large root into as many as a dozen parts. But I would not advise the amateur to do so, as sometimes he would not be able to manage them as well, and when the roots are small it would be better for him to take the instructions given above. If the roots that have been placed in a hot-bed or box have sent out two or three stems, they may be cut off and grown the same as any other cuttings are grown; and these cuttings when planted at their proper time will flower the same season.

In planting Dahlias in the open ground it should be done so that the top of the tubers are covered at least two inches, in a well manured soil; and when the stem has reached the height of about two feet, any side shoots should be cut off, allowing the root to have but one stem, and cultivating further somewhat in the form of a dwarf apple tree, which they resemble when in full growth. It is also a wise precaution to place a good strong stake beside the root when planting, to which they may be tied from time to time, as they develop. To further the development of the Dahlia a liberal supply of water continuously through the season is necessary.

BUNCH OF DAHLIAS.

Under such treatment the Dahlia will thrive in such a manner as to give the greatest pride to the amateur.

DAFFY DIL AND JONNY QUIL.

SAID Jonny Quil to Daffy Dil,
His pretty country cousin,
"Now is your chance to have a dance;
Your sisters, full a dozen,
Are here in golden cup and frill;
What say you, Cousin Daffy Dil?"

Said Daffy Dill to Jonny Quil:
"To dance would give me pleasure;
But then, you know, the wind must blow
To beat our time and measure.
Then April wind will be here soon,
And he will whistle us a tune."

Vick's Monthly.

THE DAFFODIL is the flower of fashion in London just now. Huge masses of the reigning yellow favorite fill the windows of the florists.

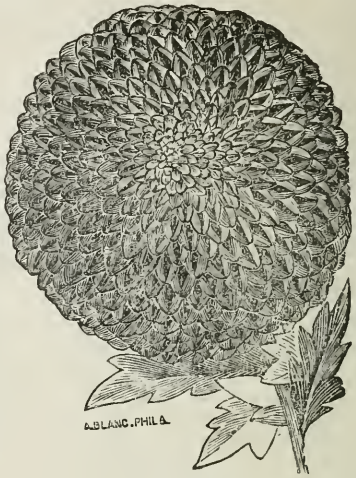
THE CULTURE OF THE CHRYSANTHEMUM.

THE CULTURE of the Chrysanthemum is very simple. Small plants can be procured from any florist, and should be planted as early in April as possible. The Chrysanthemum is a gross feeder, and requires a rich soil. The plants should have the centers pinched out as soon as they are thoroughly established and have made a few inches growth; this causes them to branch freely. The pinching operations should be continued as required until the first week in August, after which the flower buds commence to form. An occasional dose of liquid manure will be very beneficial. By October 1st the plants can be taken up and potted, being careful to shade and water them for a few days, after which they can be removed to the sitting room or conservatory for blooming.

The improvements in Chrysanthemums the last few years has been wonderful. The following varieties are among the best of their color and class, all being good growers, and free flowering:—

Japanese.—Mr. Wm. Barr, bright crimson; Le Niger, deep maroon; Elaine, pure white.

Chinese.—Frank Wilcox, golden amber; Sam Sloane, pale blush; John Salter, bronze red.



THE POMPON.

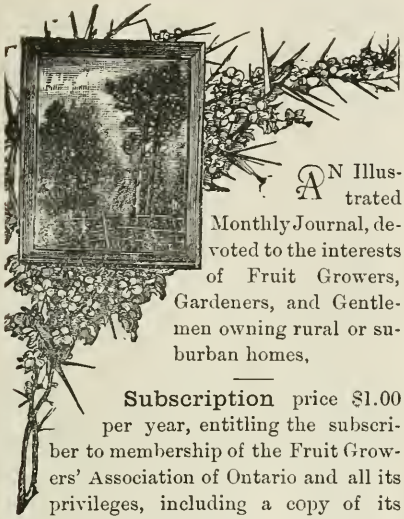
Pompon.—Black Douglas, crimson; Snowdrop, white; Model of Perfection, pink.

ANEMONE-FLOWERED.

[*Anemone-Flowered.*—Antonius, canary yellow; Contrast, rich crimson.]—*Vick's Monthly.*

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 concerning 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.

Please pay in your subscription for '87 on receipt of this number, if you have not already done so. There are still a limited number of back numbers of this year on hand for new subscribers who wish them; but subscriptions may begin with any month in the year.

The Plants, including the Cherry and the Grape, will soon be distributed through the mail. Of course, members of the Association must not expect large-sized plants, as the size is limited by the P. O. authorities to two feet in length. The Russian Cherry is at best more of a bush than a tree, even in its Russian home. The Vladimir Cherry having run short, the Executive Committee has succeeded in securing a few other Russian cherries of equal value, viz., the Litham and the Ostheim, by means of which we hope to suit the wishes of all the members preferring this selection.

The packages of flower seeds will be mailed in a few days to those who have chosen them. The names of the seeds to be sent are (1) *Aster, Victoria;* (2) *Morning Glory, Variegated;* (3) *Evening Primroses* and (4) *Nasturtium, Empress* We send four instead of three, because we have been disappointed about getting the P. Cashmeriana, and we hope thus to more than make up for the failure.

Summer Meeting.—The Horticultural Society of Ontario, of Collingwood, has given the Fruit Growers' Association of Ontario a very hearty invitation to hold the summer meeting there.

Invitations may be addressed to the Secretary, Grimsby, who will lay them before the Executive Committee.

The Hatch Bill.—There has been a great deal of agitation of late, in the United States, in favor of the passing of this bill, and finally the friends of progress in agricultural and horticultural science bid fair to win the object of their ambition.

This bill provides for the establishment of an experiment station in each state, under the direction of the State

Agricultural College; and the object so far as horticulture is concerned, is "to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds."

It is a satisfaction to know that Canada is not behind her enterprising American Cousins in the matter of experimental farm stations. Already, in accordance with an act passed in 1886, respecting "Experimental Farm Stations," which provided for one in each province, the Central Farm has been located within three miles of the Parliament Buildings at Ottawa; and plans are matured for active operations early this spring.

The first Bulletin has just been issued, and may be had by any one who will write for it, addressing the "Experimental Farm, Ottawa."

Premiums.—The *American Garden* does not believe in premiums. It is too much like hiring a person to subscribe.

We hope none of the readers of the CANADIAN HORTICULTURIST have been thus "*hired*."

The distribution of trees and plants which we make every spring, is apart of the regular work of our Association, and come to the subscribers of the HORTICULTURIST because they are members of that Association.

The object of this distribution is to test new fruits in Canada, by thus making the gardens of our members experimental, so that we may be the sooner prepared to report with confidence as to their real value.

Seed Testing.—With the object of saving our farmers from the losses to which they are annually subject through using old or inferior seeds, a glass structure has just been completed at the Experimenal Farm, for the express purpose of testing their germinating power. Samples of seeds, duly labeled, may be sent, postage free, to the above address; and returns concerning their value will be made free of charge, as quickly as possible.

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.

24. Ashes.—*What quantity of unleached ashes would be about right to put around ten-year-old apple trees, and would spring or fall be the best time to apply them?* [A. ARMSTRONG, Barrie.]

PROF. PANTON, of the Agricultural College, Guelph, replies:—"Put on an application of about three-fifths of an inch in depth. I think the spring is about the best time, owing to the tendency of the potash to dissolve, and pass beyond the reach of the roots when needed."

25. Bones.—*I can get a great many bones within a short distance of my place. How can I manufacture them into shape for use on the land?* [A. A.]

PROF. PANTON says: "Compost them with about twice their bulk of good ashes, slightly moistened; turn the pile over once a month for about three months. The bones will then be easily broken and beaten to a soft mass, which will be fit for use at once.

If the bones can be readily ground, you have an excellent fertiliser without further trouble.

26. Paris Green. *Will the sprinkling of the trees with Paris Green make the grass under the trees useless?*
[J. Dibb, Clarksburg.]

It is unsafe to use the grass for pasture for two or three weeks after the spraying, but a good heavy rain will wash off the poison from both trees and grass. Has any reader any caution to give us under this head?

27. Aphides.—*Innumerable quantities destroy leaves and fruit of my white Ox-heart Cherries. Can you suggest a remedy?* [W. F. Burton, Hamilton.]

These black plant-lice are not easily destroyed. The lady birds and the ichneumon flies destroy them wholesale; but, when these fail, try a strong solution of *pyrethrum powder*, say two ounces to a gallon of water, and spray the trees well with it. This substance owes its effectiveness to its volatile properties, and thereby effects the destruction of the aphides where ordinary poisons would fail.

Spraying with a *kerosene emulsion* is also recommended. This is made by boiling half a pound of strong soap in a gallon of water, and then adding two gallons of kerosene. Churn this to a cream, and then add nine times the quantity of water.

28. Plum for the North.—*Is there any plum better than the common red (blue?) plum that will succeed in the Ottawa valley?*
[R. Williams, Hintonburg, Carlton Co.]

Mr. A. A. Wright, Renfrew, replies:—"I know of none as yet that I can recommend as very 'sure to grow.' I have several that promise well, and among them some Russians that came to me without a name. Try Lombard, Glass Seedling, and McLaughlin. They are almost hardy here. The latter has not failed yet, but it may."

29. The Russet in the North.—*Will it succeed in Carlton County?* [R. W.]

"In favored localities, but not generally. If the subscriber lives on the banks of the Ottawa he should succeed with it, as also with the plums above mentioned. [A. A. W.]

30. To Grow Spruce and Linden from Seed.—*Please tell me the best method, as I want to experiment.*
[Andrew Johnson, Stratford.]

A. Gilchrist, Guelph.—All tree seeds should be covered very lightly; enough to hide them from view. A sandy loam is preferable. *European Linden* will not germinate until the second year. *Norway Spruce* will grow the first; both require to be shaded.

31. The Cut-leaf Weeping Birch.—*How is it propagated?* [A. J.]

A. Gilchrist.—By grafting upon the White or Yellow Birch Seedling.

GENERAL TREATMENT OF FOREST TREE SEEDS.

32. Catalpa Speciosa.—*Should the seeds be planted in the spring?*
[Wm. McIntosh, Newcastle.]

For the benefit of the inquirer and others interested in planting seeds of forest trees, we sèlect the following from Bulletin No. 1 of the new Experimental Farm, Ottawa:—

"Many of the tree seeds which mature early are better sown soon after they are gathered. This applies especially to the several varieties of elm and to the soft maple. The hard maple, box elder and ash seeds keep well over winter, provided they are stored in a cool place and are not allowed to get too dry. Acorns, nuts and stone fruits are most successfully planted in the autumn, but if kept over winter

should be mixed with moist sand and exposed to frost and planted as early as possible in the spring, taking care that they are at no time left in masses under conditions so as to heat. Many failures with seed arise from not sowing it in partial shade. If seeds are exposed alternately to hot sunshine and cold, while they are swelling, they will frequently rot before they appear above the surface. The requisite shade may be obtained by the use of brush wood, or a light layer of corn stalks or straw, removing this as soon as the seedlings are up and fairly established. Many nurserymen enclose their seedbeds with wooden frames, on which are laid light frames made of one-inch strips and covered with cotton or muslin. These are convenient and can be provided at small cost. Seedlings of evergreen trees grow slowly and require to be shaded and kept moist during hot weather all through the first year of their growth and sometimes longer. Seeds take some time to swell their coats after being placed in the ground, hence, if planted dry, they should be sown as soon as soil can be had to cover them. Germination may be hastened, especially with seeds of a hard texture, by pouring hot water on them and allowing them to soak for twenty-four hours before sowing.

Seeds sometimes fail to grow from being planted too deep. The larger nuts and acorns should be covered with soil about as deep as the seed is thick; other smaller seeds should not be covered with more than half an inch of mellow soil, pressed gently with the back of a spade so as to make the earth firm around them, and when the young seedlings appear they should be carefully weeded. Occasionally seeds will remain in the ground until the following season without germinating. Should any fail to grow by the time spring is over, and on examination the kernels are found sound, the seedbeds should be kept weeded and shaded until the next season."

THE DIŒCIOUS CHARACTER OF THE MULBERRY.

33. My Mulberry Tree *was full of blossoms, but they all dropped off. This was the first year it blossomed. I was reading in the Horticulturist, p. 267, Vol. IX., that the Russian Mulberry was diœcious, requiring two or more trees to grow together. On my tree the leaves are of different shapes, some being serrated, while the most of them are lobed, like an oak leaf. Will I have to get another tree before I may hope to eat the fruit of the mulberry?*

[J. B. Burk, Brougham.]

REPLY BY SIMON ROY, BERLIN, ONT.

Referring to Mr. J. B. Burk's inquiry I have to say that his Russian Mulberry trée is a male *(Staminate)*, and only a flowering specimen, consequently he can never expect to have fruit on it.

The sexuality of plants was first discovered by Linnaeus, the Swedish Botanist, and is now generally understood. Various varieties of trees and plants are of a diœcious character, *i.e.*, one being a male and the other a female, as is the case with birches, poplars and larches; also in grape vines *(Vites)*: example, the Sultana Raisins of commerce are the product of a female or pistillate flowering vine and are devoid of seeds, and our native mignonette, scented variety, is a male or staminate plant, bearing no fruit. Since the propagation of the mulberry is so simple, by growing it from cuttings, it is only necessary for him to get a few from a neighbor who has a fruit-bearing tree, or to obtain scions and top-work his tree by either budding or grafting.

The female tree bears fruit but not seeds, and it has serrated leaves only.

Timely Hints.

GRAFTING.

April and May are the months for top-grafting. This operation is so simple and so useful that every orchardist should practice it. Our country is full of orchards that are unprofitable, owing to inferior kinds, or because of the apple spot. The best remedy in cases of old and feeble trees would be to cut them down and burn them; but, if still thrifty in growth, they should be top-grafted to more desirable kinds. Scions of the best varieties can easily be purchased from any of our leading nurserymen at a small expense.

The important point in grafting is to secure a perfect union between the cambum layer of the stock and that of the scion. It is through this delicate tissue, lying between the wood and the bark, that the circulation of the mucilaginous liquid continues which develops the new growth of each. If this union is well adjusted the operation is pretty sure of success, other things being equal.

The *Rural New-Yorker* commends the following as a simple and easy method of grafting:—

"Cut off the stock at a right angle to itself. Cut a slit down the bark an inch or more from the top, as in budding. Cut the scion four or more inches long and, beveling one side of the larger end, insert it after loosening the bark on either side of the cut, the same as a bud is pushed into its place. One or a dozen scions may thus be inserted in the stock according to its size."

FERTILIZERS.

Professor Panton, of the Agricultural College, Guelph, gave some valuable information on this subject at the Chatham meeting. Speaking of the value of nitrogenous manures for the strawberry, he said that *dried blood* was very rich in nitrogen and was especially useful for the strawberry. It contains 14 per cent. of ammonia (a compound of nitrogen and hydrogen) and 7 per cent. of phosphoric acid.

He advised the application of 300 lbs. per acre, between the rows. A home-made

SUPERPHOSPHATE FOR THE ORCHARD

can be manufactured as follows:—By bulk, one part bone dust, two parts ashes, to which add one-third bulk of water and one-sixth bulk of plaster. This lacks nitrogen, for the supply of which barn-yard manure can be added.

Another formula which he gave was as follows:—By weight, one part bone-dust, one part ashes, one-quarter part slacked lime, one-eighth part crude carbonate of soda. Mix this and let it stand; then add, say about one-half bulk of good soil.

Fertilizers for the Strawberrry.—The Editor of the *Rural New-Yorker* has tried successfully the following fertilizer for the strawberry and recommends it to others. The proportions for an acre are 500 lbs. wood ashes, 400 lbs. bone flour, 200 lbs. nitrate of soda and 200 lbs. of kainit.

Nitrate of Soda.—Mr. Joseph Harris says it is surprising that we have not yet learned what a cheap and valuable fertilizer we have in nitrate of soda. It is derived from the leaching of sea-weed and other vegetable matter, and is the very essence of manure.

It looks like common salt, and may be sown hand-cast over the ground at the rate of 500 or 600 lbs. per acre. It is a capital fertilizer for the lawn, garden and orchard.

Trees Girdled by the mice in winter may, according to the *Orchard and Garden*, be saved by immediately covering the wound with grafting-wax, or

with tough paper saturated with linseed oil, and then wrapped with old cloths, and so left until the 20th of August, when a new bark will be formed over the wound.

This bark is formed by the exudation of cellular material from the sap-wood, the same way that a callous is formed over a cut root or scion when packed in damp sand or saw-dust.

We have often tried banking a gnawed tree with earth, where the wound was still quite fresh and not too large. The degree of success was sufficient to lead us to endorse the plan described above as worth trying.

The plan, so often commended, of trying to bridge over the wounded surface with scions of young wood, as shown in the accompanying illustration, is good, but is almost sure to fail with inexperienced hands. And failure means the loss of a year's time before the tree is replaced.

Hotbeds need air, water, sunshine, and a constant vigilance; for cold frames the same rules are equally necessary. I do not think a single advantage can be claimed for hotbed sash of any other size than 3 x 6 feet. These need to be made of the best pine, 2 inches thick, with horns at each end to move them by. They should be set with 6 x 8 double thick glass, bedded, tacked and puttied and well painted with white lead. Such sash, with good care, and well housed in the time when not in use, will last a life-time.—*Farm and Home.*

THE SUBSOIL PLOW AS A DRAINING MACHINE.

BY J. TWEDDLE, STONEY CREEK.

The time has come in our experience in fruit growing, when we are convinced that it is useless to plant out orchards, vineyards, and small fruits in cold or wet lands, without first draining and subsoil ploughing. Underdraining is made doubly effective by subsoiling crosswise of the drains, thus opening up the soil to a depth of 12 to 15 in., and thereby leading the surplus water quickly to the drains, and thence to their outlet.

For the purpose of underdraining, I have found no implement so useful in all kinds of land, as the subsoil plough. The hardest clay can be cut with comparative ease; and stones are scarcely an objection to its use. If the stones are small, they are generally moved the first time they are struck; if large, it is best to pass over them until the plow-point can be got under them, when they are easily removed. In case of a very large stone, it is best to cut around one side, as the plough is easily swung to one side for such a purpose. Any depth can be cut, down to 4 feet, with no greater width than is necessary in digging with the ordinary draining spade and hoe; also, any greater or less length of drain may be opened and finished up in one day in case of danger from caving or other source. I would say it is best to use a steady, quiet team and a wrought share, for fear of striking large, solid stones. Drains may be cut almost any width at either top or bottom, in this way. I cut one outlet drain 4 feet deep, 20 inches wide at the surface, and 4 inches at bottom, in a very hard and stony subsoil.

My mode is first to cut a deep and wide furrow with a large pointer-plough that will throw the furrow well out, so as not to fall back when using the subsoil plough afterward. Then I come back in the same furrow and throw out as much more as we can on the other side, without making the drain more than 15 to 18 inches in width at the surface. In this way it will be seen

that I can get from 6 to 10 inches of depth to start on, without any hand labor of any account. I next hitch the team to the subsoil plough, connected with it by means of a long logging chain, and a long double-tree, say 4½ to 5 feet. Driving a horse on each side of the drain, I commence to loosen the subsoil, first hitching close to the plough, as usual, while the drain is shallow, and lengthening the chain as the drain deepens. I plough one, two or three rounds as the condition of the subsoil may require, until we have stirred up 6 or 8 inches of earth; then I commence shoveling out by means of long-handled, round-pointed shovels. When all the loose earth is thrown out, I proceed to plough again, and so on until about the required depth is gained. Care should then be taken to get an even grade, and this is best done by use of the pickaxe and draining hoe. A narrow shovel for the narrow part can best be made by taking one of the common shovels to the village blacksmith and having the sides turned up, so as only to leave a width of four inches on the bottom.

I believe this plan will institute a new era in underdraining; making the cost less by one-half than the old way of digging with spade and pick axe; and it is far more economical of capital than buying an expensive ditching machine, and all the expensive repairs, etc., attendant upon its use, with the various vexations of its use if in stony or wet land.

Small Fruits.

BEST MARKET VARIETIES.

BY E. MORDEN, NIAGARA FALLS SOUTH.

The new and wonderfully promising varieties which blossom each year while the snow yet remains will not be noticed here. He who has plenty of money and an abiding faith in lotteries will, as usual, invest in them. Contrary to the general rule, the best varieties are the cheapest ones in most cases.

In strawberries, the Crescent now leads. Wilson is valuable of itself and as a fertilizer. Manchester has, I think, come to stay. Sharpless is very large and good, and sometimes productive.

In red raspberries, the Cuthbert displaces every other variety. The Turner and Philadelphia are hardier at the north.

In black caps, Souhegan early, Mammoth Cluster medium, and Gregg for late. The Gregg does wonders here, but fails in some localities.

With me the Taylor is the best blackberry.

In currants, the Raby Castle leads by several lengths. On soils of clay it is said the Cherry Currant is productive.

The Houghton Gooseberry succeeds famously on our soil, but the fruit does not compete with the larger kinds in the case of a glut. The Downing is productive and salable. Smith's Improved fails here.

The Concord is still the leading grape. Worden seems to be a distinct improvement in most respects. The Rogers and many other varieties of grapes are defective as regards growth, productiveness, liability to mildew, or in some other respect. Their merits and demerits cannot be discussed in a brief article.

MR. AYLEWORTH'S BIG STRAWBERRY YIELD.

In reply to inquiry, Mr. Ayleworth writes:—Sir, The strawberry plot mentioned by me in your February No. consists of sandy loam, liberally treated in 1883 and 1884 with a compost of muck, well rotted horse manure, hen manure, and unleached hard wood ashes. It is underdrained on three sides. It was used for raising roots in 1884, and deeply ploughed in the fall

of that year. Early in April, 1885, it was raked over and given a light dressing of hard wood unleached ashes, and planted with thrifty Wilson plants, in rows from two feet to two feet and a half apart; the plants from nine to twelve inches apart. Between the rows of strawberries were sown Globe Mangolds and Big White Carrots (about half of each), midway between the rows of berries. The ground was kept thoroughly free from weeds and grass through 1885, with the hoe and hand. No runners were disturbed, unless by guiding them so that they would be properly spread over the plot, or helped a little with earth to take root. Sixty baskets or quarts of strawberries were taken from the vines in June and July, 1885. Also, in October, 1886, sixty bushels of mangolds and carrots were taken from the same plot. The picking began on the 19th of June, and closed on the 20th of July. Rain, in abundance and at right times, greatly helped. I have tried to secure a second large crop from the same plot, but have not succeeded. The vines seemed to have exhausted either themselves or the soil, and weeds and grass, and especially the white clover—about the worst of weeds among strawberries—seem to spring up spontaneously, as if for spite. So that I strongly incline to be satisfied with *the one big crop*, and the few produced the year of planting, and turn all under after the second year.

J. B. Aylesworth, Collingwood.

SMALL FRUIT NOTES.

Berry Boxes.—The Fruit Exchange, Benton Harbor, Michigan, has adopted the following sizes for their berry boxes for 1887.

Quart Boxes; 5 inches square and $2\frac{11}{16}$ inches deep, containing 67 cubic inches, or a full quart.

Pint Boxes; same size square as the quart, and half as deep, to hold a full pint.

We would suggest the wisdom of the members of our Association agreeing together to accept some uniform size in berry boxes, and certainly quarts and half quarts are the most sensible sizes.

Marketing.—A writer in *Tennessee Messenger* says the best way of selling our fruits is to induce the fruit buyers who speculate in fruit to come to our shipping points and there purchase direct from the growers, instead of from commission men in the towns. This method is practised in the peach business in New Jersey and Maryland.

Fay's Currant.—Mr. Geo. Josselyn, Fredonia, N. Y., states in his spring circular, that he has already paid the estate of Lincoln Fay over $22.000 in cash, as their share from his sales of Fay's Prolific, which he considers worth noticing, as the first instance in which the originator has received anything like a decent compensation for a good new fruit.

Overdone.—R. F. Schumacher says in *Ohio Farmer*, that small-fruit growing is overdone; and that wheat and potato growing is the more profitable of the two. He had to sell his strawberries at 3 cents a quart in Cleveland, and his grapes at $1\frac{1}{2}$ cents a pound. No wonder he is sick of the business.

The Jewell Strawberry has so many points of excellence that one reads with regret the statement in the *Orchard and Garden* that it is a poor grower. Who has tested it thoroughly in Canada?

Minnewaski Blackberry.—W. A. Brown, Benton Harbor, Mich., considers this a very promising blackberry. He says he has not yet tested its general hardiness, but has faith in its success.

USES OF FRUITS.

Fruit-Eaters and Doctors. — We were struck recently by the remarks of a doctor friend of ours, who said no one thing will do so much to make people independent of the medical profession as the daily free use of fruit. He had noticed that those farmers in whose families fruit was regularly and largely consumed seldom needed his services. We thought what a pity that every farmer in the land could not be convinced of these truths. It is a deplorable fact that farmers' families do not enjoy that robust health that country air and out-door life, with plenty of exercise, should give. — *Rural New Yorker.*

Scientific.

Useful Fungi.—Among the numerous forms of fungus which live upon higher plants (many of which are so detrimental to their hosts) are some, it is now believed, which live with these on terms of mutual assistance. Frank found that the young root-points of some English forest trees, as the beech and the oak, are covered with a coating of fungus (probably belonging to the truffle or allied family), which seems to help in the nutrition of those trees. Another interesting case is that of fungi which live with orchids, and whose mode of propagation has lately been established by Herr Wahrlich.

To Escape Yellows.—Mr. Hiller, in the *Gardener's Monthly,* advises planting peach trees that are budded on plum roots, as a means of escaping the Yellow. He thinks that the roots of old peach trees, that have died of this disease, retain it a long time in the soil, and from them it attacks the newly-planted peach trees. The editor further contends in favor of the view that the Yellows comes primarily from the attack of a fungus—the mycelium of a species of Agaric—upon the roots of the peach. If this is the case, plum budded peach trees should escape the disease.

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.

High Class Fertilizers, manufactured by the Standard Fertilizer and Chemical Co., Smiths Falls, Ont.

One of the most important questions at present before us as fruit growers. is an abundant supply of suitable fertilizers for our orchards and gardens. The discovery of those exhaustless phosphate mines, of which Mr. Buck's article in the February No. treats, and of extensive stores of kainit (containing potash) in France, all help to encourage our hopes of a plentiful and cheap supply of these essential manures.

Messrs. Brodie and Harvie offer in their pamphlet a *special fruit tree fertilizer*, of which they say about 600 lbs. per acre should be used; and for a peach orchard about five or six pounds per tree. The guaranteed analysis of this is claimed to be: Ammonia, 2 to 3 per cent.; Phosphoric Acid (soluble and precipitated), 8 to 10 per cent.; Potash (actual), 8 to 10 per cent.; Magnesia, Lime, Soda, &c. The Company claim that their fertilizers are no mysterious mixtures of nondescript materials, but are manufactured on scientific principles from materials which are open to inspection.

REPORTS.

Studies in Practical Agriculture, published by Cornell University, and for sale by Andrus and Church, Ithaca, N. Y. Price 50 cents.

Report on the Fungus Diseases of the Grape Vine, by F. Lawson Scribner, B.Sc.

This is a most excellent work issued by the United States Department of Agriculture. It treats of the Downy Mildew, the Powdery Mildew, the Black Rot, Anthracnose, Grape-leaf Blight, and Grape-leaf Spot. It is illustrated with seven colored plates, and comprehends a thorough investigation of these fungi, with best known remedies. Later in the season we shall give our readers the benefit of the information it contains, so far as it applies to Canada.

Report of the Summit Co. (Ohio) Agricultural Society, 1886. Mr. Crawford, Cuyahoga Falls, Secretary.

Columbus (Ohio) Horticultural Society. Report for 1886. W. S. Devol, Sec.

Industrial Exhibition Society of Toronto. Reports for 1886; Directors and Committees for 1887. H. J. Hill, Toronto, Secretary.

Central Experimental Farm, Ottawa, Canada. Prof. Wm. Saunders, Director. Bulletin No. 1.

This is of general interest, and may be had on application, free.

CATALOGUES.

Lovett's Guide to Fruit Culture, Spring, 1887. Published by J. T. Lovett, Little Silver, N. J.

This is not only packed full of cuts and descriptions of fruits, new and old, but contains also eight colored plates.

Seed Catalogue, 1887. Wm. Rennie, Toronto.

A splendid catalogue of 72 pages; free on application. Mr. Rennie evidently makes a specialty of select vegetable seeds.

Choice Seeds and Plants offered by Dobbie & Co., Seed Growers, Seed Merchants, and Florists, Rothesay, Scot., 1887. Ninety pages, too full of solid matter to allow room for many illustrations.

Small Fruit Plants and Grape Vines, 1887. T. C. Robinson, Owen Sound, Ont.

Seed Catalogue, comprising Garden, Field, and Flower Seeds, Fruit Trees, &c,, 1887. J. D. Roberts, Cobourg, Ont.

J. S. Pearce & Co., successors to Pearce, Weld & Co. Vegetable and Flower Seeds, 1887.

PRICE LISTS.

Price List Niagara Falls Nurseries. E. Morden, Niagara Falls South, Ont.

Mr. Morden is a practical grower of small fruits for market, and therefore naturally offers for sale those varieties which he himself finds most profitable. His prices are very reasonable.

Price List of Evergreens, Roses, Clematis, &c., for sale by A. Gilchrist, Elora Road, Guelph, Ont.

Mr. Gilchrist makes a specialty of growing evergreens from seed.

Humorous.

A little Danbury girl, when asked by her mother about conspicuous little bites in the side of a dozen choice apples, answered: "Perhaps, mamma, they may have been frost bitten, it was so cold last night."—*Danbury News.*

A Gentleman was agreeably surprised to find a plump turkey served up for his dinner, and inquired of his servants how it was obtained. "Why, sah," replied Sambo, "dat turkey war roostin' on our fence frea nights, so dis mawnin' I seize him for de rent ob de fence."—*National Standard.*

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HE CHOICE NEW EARLY
WHITE GRAPE.
OORE'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 hardiness 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 :

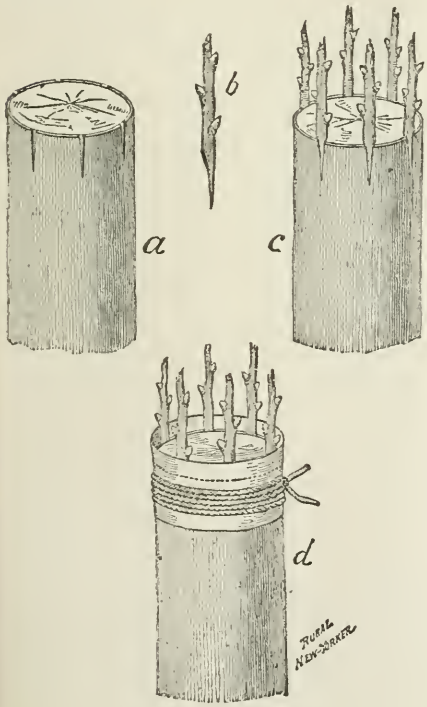
"Sir :—I enclose an article from the pen of Mr. James Dougall, which appeared in the Montreal *Witness* some years ago. While I agree on the main with some opinions expressed in the the January number of the *Horticulturist*, that the Snow Apple and other pestilence breeding kinds should be cut down 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 Pœony* 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.

Lime 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 Shiawassee Beauty, known also as Fall Queen, a large brilliant red fall apple, Nodhead, Tinmouth, 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 Tinmouth.

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 thv 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

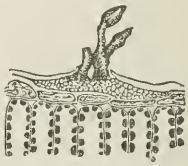


Fig. 2.—Very small leaf spot.

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

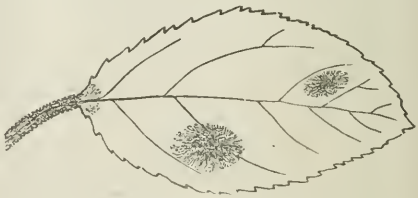


Fig. 3.—Leaf affected by Fusicladium.

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, ½ 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, ½ 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, ½ 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 6½ gals. of water. Apply with a whisk.

Another and simpler remedy, used with great success in France, is the following: Dissolve 2½ 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.

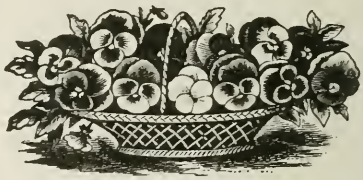
Wishing you every success,

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.

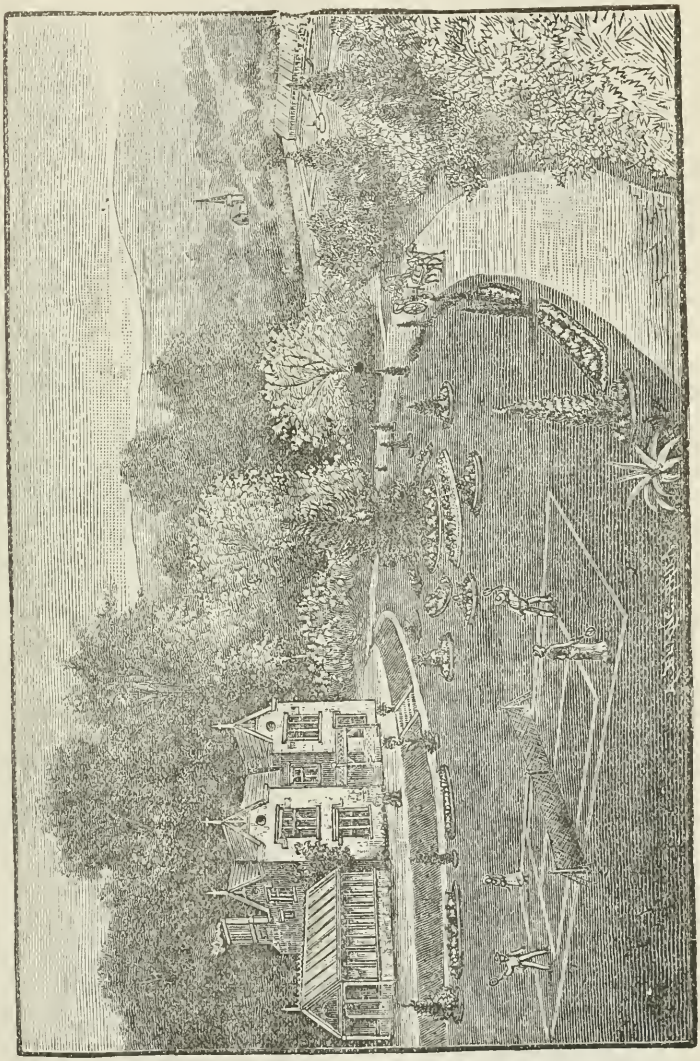
In the first place, careful preparation of the ground proposed to be laid down to turf is necessary. This should be commenced in the autumn by draining, if found requisite, and digging to the depth of six to twelve inches, according to the nature of the soil. When this has been done, the land should 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 Stolinifera*).

Crested Dogstail (*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 sacrified. 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 adapted 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 B. 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 c lassification 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, PESISTENT 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.

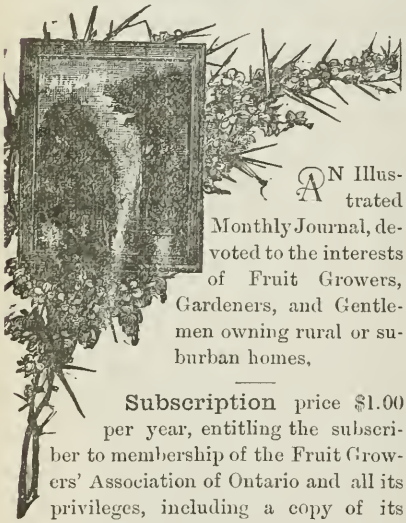
Mr. Downing suffered severely from the injuries caused by an accident in the city of New York, which laid him up for many weeks in helplessness. During his time many very valuable notices of worth and respect were issued from the various sections of the press, all of which were very pleasing to the many 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 concerning 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 conductibility 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 anihilate 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. Panton, 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 Collingw'od*

(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 begun 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-feet-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.

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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 vrites 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 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 fertiliezrs 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 advertize, 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 magnicent 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 disagreable 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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Flowers.

LILIES.

The Lily fair, so richly drest
  In jewelled robes bedecked with gold,
Still teaches in its royal vest
  The same sweet lesson as of old.

Where Western streams like coursers run,
  And Eastern vales in verdure lie,
It spreads its glories to the sun,
  And lifts its chalice to the sky.

And gathered in from every land,
  From valley, hill and mountain glen,
Its ranks in regal splendor stand,
  And glorify the homes of men.

Its fragrance still from age to age,
  Shall breathe to all the blessed line,
That stands on inspiration's page,
  And bids us trust the POWER DIVINE.

Mrs. Perkins in THE MAYFLOWER.

PERHAPS no family of flowers has attracted so much admiration from old and young in all ages as the Liliaceae. No wonder that Mrs. Lincoln in her introductory lectures to the Linnean system of Botany chose the Lily as her model flower; the parts are all so perfect and so easily distinguished. No wonder either that the inspired writers of old selected the white lily as a type of purity and excellence; or that the Great Teacher himself called the attention of over anxious humanity to the beauty of this flower, which, without toiling or spinning, was clothed by its Creator in array so beautiful that even a Solomon in his magnificent regal robes could not compare with it; an object lesson, teaching his hearers more implicit confidence in Divine Providence.

To this family belongs the Adder's-tongue of our woods so often miscalled Violet, the stately Yucca, the humble Lily-of-the-Valley, the Star-of-Bethlehem, and the Day-Lily: and beside, such natives, it also includes the Tulips the Crown Imperial, the Hyacinth and

the Tuberose. The Calla, though beautiful enough to be a member of this family is totally distinct, being a member of the Arum family, of which the Indian Turnip and the Skunk Cabbage are familiar examples.

Of the genus *Lilium*, we have two or three native species all valuable for our flower gardens and offered for sale by our Florists, but procurable in their native haunts by any lover of wild flowers, viz;—the Wild Orange Red Lily *(L. Philadelphicum)*, the Wild Yellow Lily *(L. Canadense)*, and the Turk's Cap Lily (*L. Superbum)*.

Besides these, most florists offer for sale some forty or fifty varieties of cultivated species, and also numerous subvarieties, all of great beauty and excellence. Among the Japan Lilies, the Gold-Banded, (*Lilium auratum*) shown to the left in our coloured plate,* has become exceedingly popular. H. T. Williams, editor of the Horticulturist (New York), 1869, p. 246, said of it: —"This species of Lily cannot fail to become one of our most popular flowers. Its magnificent size, great beauty, and, above all, its peerless fragrance, surpass all of the same species we have yet met. When the price can be brought down to 50c. instead of $1.50 or $2—the sales must be counted by hundreds of thousands, instead of, as now, by thousands only."

But, now that this has come to pass, and a dozen can be purchased at the former price of a single bulb, we fear that this variety is less sought than it should be, simply because it is no longer a novelty. When will the day come in which we shall have learned to value both flowers and fruits, not upon the score of novelty, but wholly upon the ground of their absolute and intrinsic merits?

We leave the subject of the care and cultivation of the Lily to be treated in a future number by our esteemed contributor, Mr. Hermann Simmers.

POND LILIES DOMESTICATED.

At the New York State Experimental Station, says the *New England Farmer*, there is a barrel cut down to convenient size, and then set in a hole dug in the earth upon a corner of the lawn. The top of the barrel is just level with the surface of the lawn. It has about four inches of river mud in the bottom, in which were planted a few roots of the common white pond lily. The barrel was then filled with water and is kept full from a faucet in the aqueduct pipe, the water being turned on as often as necessary. The barrel has been a beautiful miniature pond of white lilies all through the season.

In the fall, after the weather gets cold, the barrel or tub is removed to the cellar, where it is protected from freezing, and where the roots of the lilies will be kept in conditions similar to what they would be surrounded with, in their natural state. There can be nothing more charming in the way of flowers on a lawn than a small pond of water lilies, blooming daily the whole summer through. Of course, the barrel must be set where teams and persons would not walk into it by day or night. If the tub is tight, the trouble of keeping it supplied with water will not be great on any lawn.—*Floral Instructor.*

* NOTE.—The other lilies represented in the frontispiece are *L. Lancifolium rubum* and *L. Lancifolium album.*

NEW ROSES.

BY FREDERICK MITCHELL, INNERKIP, ONT.

As you invited me to give my opinions on the latest novelties in roses before the meeting of the Fruit Growers, held in February last in Chatham; and as I failed to attend that meeting, perhaps a few notes on the subject would not be out of place in the columns of our magazine.

This season has not been as prolific as usual in the production of much-lauded varieties. The rose that has created the greatest *furore* in the rose world, is a Tea, and is called

"THE BRIDE."

Mine has not yet bloomed, but I have seen it in bloom elsewhere. I do not like to say very much in favor of a rose of which I have had so short an acquaintance, but I certainly think that this rose has come to stay. It is white, and in the style of Catharine Mermet. I do not consider the buds or blooms to be quite equal in value to that fine old white Tea rose Niphetos, but is apparently far ahead of it in growth and vigour of plant. I will write again of this rose as soon as I have had more acquaintance with it, but from what I have already seen of it I have the best of hopes for its future.

SOUVENIR DE VICTOR HUGO

is another new Tea that some of nurserymen are trying to boom this spring. I have it in bloom at the present time. I have not yet seen anything about it to specially commend it. In colour it is a blending of cream and pink, nearly of the same shade as that best of all roses for the amateur, Marie Van Houtte. Although it may turn out to be a good rose, I do not see anything sufficiently marked about it to make it an acquisition, or even to save it from the general oblivion into which so many new roses sink after the first year or two of their existence.

PERLE D' OR

is a new Polyantha for which great things are claimed. I have it in bloom. It is not nearly such a rich unique colour as it is claimed to be. It is nearly of a salmon colour when first opening, but fades very quickly to a shabby-looking dead white. It is much too large for a Polyantha, and has none of the beautiful irregularity in shape found in Paguerette and others of this class. The best thing about it is its rich Tea perfume.

Since I wrote in the September number of *The Horticulturist* there has been but little opportunity to study the merits of out-door roses. As to the Hybrid Tea,

WILLIAM FRANCIS BENNETT,

of which I wrote somewhat disparingly, I have nothing to take back, but still hold that for the amateur at least it is not even a third-rate rose. I notice that some of the leading American nurserymen who last year boomed it as perhaps rose was never boomed before, have this year dropped it from their catalogue altogether. I have nothing to add to my remarks on other new roses mentioned in the article referred to, but will take them up again as soon as they again commence to bloom.

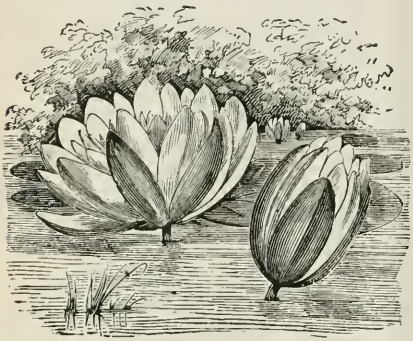
WATER AND BOG PLANTS.

Mr. W. A. Manda, of Cambridge Botanic Gardens, is writing a series of articles to the *American Garden*, on "Our Native Plants." He gives a list of bog plants which may be made very useful to the cultivator for beautifying streams, or unsightly marshy places, or for which an artificial place might be prepared in the lowest part of the garden.

These plants may be propagated from the seed or by root division. A good way to sow the seed of

WATER-LILIES

in a pond, is to put the seeds in a small ball of clay, and then drop them into the water. One and a-half feet of water in summer, or less, is sufficient to produce the best results, while deeper water is an excellent protection from frost in winter.



The beautiful large Water Lily (Nymphæa Odorata), so common in ponds and inlets of Lake Ontario, is certainly the most charming of our native water plants. It grows in great abundance near the Grimsby Park, and many a boating excursion is made by parties of young men and maidens to the pond where these lovely water nymphs abound. The rosea, or rose-coloured variety, we have not noticed in Canada, nor the species *N. tuberosa* which Mr. Manda describes as having "very large leaves, usually standing straight above the water, while the flowers, which often measure nine inches in diameter, are snow white." Perhaps some of our readers may have been more observant.

The Yellow Water Lily is quite common, especially *Nuphar advena*, but is not so captivating. Mr. Manda speaks of several other varieties of the Yellow Water Lily, viz.: *N. luteum*, which has floating leaves and yellow flowers; *N. sagittifolium*, which has arrow-shaped leaves and flowers of bright yellow; and the western *N. polysepalum*, which has the largest flowers of this genus. We should be pleased to hear whether any of these, except the first, are known in Canada.

The *Caltha palustris*, or Marsh Marigold, which Mr. Manda commends as ornamental with its large, numerous golden flowers is quite common here. Just now, on the 12th of May, it is in its full glory in our swamps. The other day, when out for a ramble in the woods, we came suddenly upon a little stream dotted with these bold, showy plants. The children screamed with delight at the discovery, and as a memorial of the trip, one of them now decorates a shady spot in the garden, with its bright yellow goblets.

MONEY IN FLOWERS.

THE following from the pen of an intimate friend (Mr. Goldie), himself a great florist, goes to prove that there is in money in flowers. Writing on the 6th April, he says:—"I returned last week from a visit to New York and Boston, and had a good time amongst some of my old gardening friends, and oh! such fine flowers as I saw. Orchids of almost unearthly beauty. Roses—and such roses!—as large as coffee cups; and many other flowers too numerous to mention. It would astonish any one not used to such things, to hear of the amount paid for flowers. In New York, when any grand party takes place, the flower decoration often costs them from $500 to $5,000. In fact I heard of one wedding party that cost $7,000 for flowers alone. What would Canadians think of that?"

I need not say that people there make their money more easily than we do. Marriage in New York seems to be an expensive thing. If I thought the people of Morrisburg would ever be affected with the flower fever, even to half

the extent of the above, I would hesitate to give up Sunnyside.—*J. C. in an exchange.*

CULTIVATION OF THE PÆONY.

BY HERMANN SIMMERS, TORONTO.

PÆONY CHINENSIS, or Chinese Pæony is another valuable permanent addition to the flower garden, and one might say indispensable, as there is no plant flowering during this month that requires so little attention. The amateur may not notice, under the above heading, that this is the ordinary plant very often termed *Red Piny*, but the above is the correct botanical name. The amateur also may not be aware that the Pæonies have almost as great a variety of colours as the Rose, with a somewhat similar fragrance ; I have had many people mistake them for very large Roses, when a bouquet has been made up of partially opened flowers. The Pæonies of late years have been very much improved in variety of colours, and now the colours vary from pure white to light and dark pink, pink and white variegated, etc., all exquisitely fragrant, which is not the case with the ordinary dark red variety. The best season of the year for planting, in my experience, has been from the middle of October until frost comes. Almost any soil will grow them successfully. The great disadvantage in planting in the spring is that the warm weather comes on us so very rapidly that the stems appear above ground before the amateur thinks of planting. By planting in the fall, they flower easily the following summer. Propagation is by division of roots, which may easily be done by cutting the heart of the root, together with an eye or bud and as much of the roots as can be conveniently spared. In my estimation there is no more easily grown, and more satisfactory plant than the Pœony. I would suggest not to always grow the common dark red variety, but to choose the lighter colours, which are oftener the newer varieties. Another advantage is that, as yet, this plant has not been attacked by insects of any kind, the stems and leaves being of a harder substance, does not suit the palate of the insects.

CHRYSANTHEMUM CULTURE.—"Amateur," in *Popular Gardening*, gives the following rules for Summer Care of these popular plants, viz. :—

(1) Never keep them in doors when they can possibly be in the open air.

(2) Never let them became pot bound until they have budded to bloom.

(3) Never shift *immediately* after nipping

(4) Never let them stay dry.

(5) Never let them want food.

(6) Give them plenty of sun and not too much wind.

(7) Pinch freely.

(8) For fine flowers, rub off three out of five, and toward fall all that may appear.

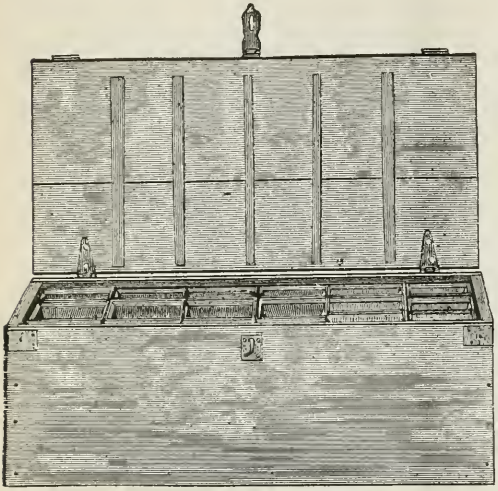
Fruits.

FRUIT PACKAGES.

IN GROWING FRUITS for shipping to city markets, it is a great mistake to postpone the purchase of barrels, crates and baskets, until the time approaches when they are positively needed. It is already high time to secure crates and baskets for the strawberry crop, for before the end of the present month, there will be business enough in gathering and marketing the fruit, without any solicitude concerning a sufficient supply of baskets. Indeed, we who live on the south shore of Lake Ontario, usually begin shipping strawberries about the 20th of June.

For many years fruit growers in Canada used the wooden crate holding 54

quarts, for packing their small fruits for shipping. It served an excellent



54-QUART BERRY CRATE.

purpose, and was very popular. But there was a difficulty in getting them promptly returned, and often many of them would go astray. It was also a great deal of trouble to the fruit merchant to collect from his customers the quart baskets, so as to return them safely to the shipper, as he was in duty bound to do. The careful packer, too, found that after two or three trips the wooden crate became much racked, and the baskets inside so soiled as to detract very much from the appearance of the fruit.

The plan of using

GIFT PACKAGES,

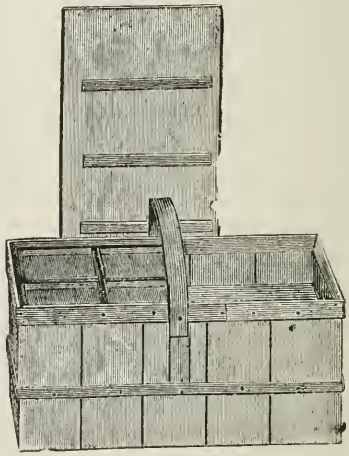
made possible during the past two or three years by the introduction of new machinery into our basket factories, has grown more and more popular in Canada.

First the little baskets were offered cheap enough to be given away with the fruit, and now the crate itself is offered in the same way.

To a Grimsby fruit-grower belongs the honor of devising a basket-crate, which is rapidly superceding every other package for small fruits, and which is now being manufactured by Mr. W. B. Chisholm, of Oakville, as well as at Grimsby.

This basket-crate holds twenty-four quart baskets, and is now offered for sale at so reasonable a price that it may be given away with the fruit. This greatly facilitates trade, and the distribution of small fruits to distant points all over our Province.

Another advantage of this crate is its handle. Express messengers are not always careful, and a heavy box gets many a toss, or fall, which a lighter crate would naturally escape, especially if it is provided with a handle. The cover of the basket-crate

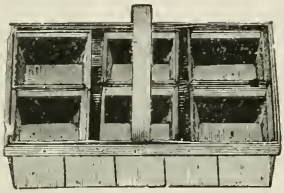


24-QUART SHIPPPING BERRY BASKET.

is usually fastened on with a piece of wire or tin drawn over it near each end; but if a more secure way could be planned of fastening the cover to hold the fruit more snugly, so that it could

not move in the least, it would be still more satisfactory.

The address may be put on with a tag, or by means of a stencil. Our habit is to use a stencil for the names of both consignor and consignee; as when so marked the address cannot be lost or obscured, and is seen at a glance. A stencil, with name and address, can be cut in tin by almost any tinsmith, if it is not convenient to order one from those who make a business of their manufacture; and all that is needed in using it is a box of blacking and blacking-brush.



FIELD BASKET.

The carrier, or field-basket, is also a very useful article in berry-picking season. Each picker is provided with one of these, by means of which he can carry safely six quarts of fruit at one time to the packing house, without danger of tipping or spilling.

In another number we may speak of packages which are suitable for our other fruits. In the meantime we shall be pleased to hear the experience of the readers of this Journal in the use of packages for fruits.

Packing Pears.—The French, who export more pears than any other nation, cover the inside of the boxes with spongy paper or dry moss, which absorbs the moisture. Each pear is then wrapped in soft paper, and placed in layers in the boxes, the largest and least mature in the bottom, filling all interstices with the dry moss. Thus they will keep a month or more. They are so packed that they cannot touch each other, and all motion is prevented. If one decays the others are not harmed. —*Gardners' Chronicle.*

BLACK GRAPES AT CLARENCEVILLE, QUE.

BY WM. MEAD PATTISON, CLARENCEVILLE, QUE.

As my contribution in May number of last year was confined to the newest white grapes, I will now take up recently introduced black, as far as tested at this place. From an acquaintance with most of the grape propagators in the United States, I am enabled to obtain for trial any new variety likely to be adapted to this Province somewhat in advance of their introduction for sale to the public. Consequently, the varieties touched on here will mostly be new to readers of *The Horticulturist*, but will give them a knowledge of some perhaps destined to come into general cultivation in Canada in a few years.

On black grapes in years past, found of more or less value to us in the north, we are indebted to Bull, Rogers, Ricketts, Worden, Moore, Dr. Grant, Miller, Rommel, Ives, Steel, Underhill and Garber of the States; Arnold and Dempsey of Canada, most of whom obtained their successes by artificial hybridizing. But John Burr, of Kansas, U. S., has experimented in a new direction by grouping the varieties intended to be crossed, relying on natural fertilization, and selecting for propagation the largest and best matured seed from the best fruit in the "group."

A very important point has been gained by Mr. Burr's long study and persistent labours in producing foliage resisting our trying climatic changes and frost, obtaining at the same time grapes of a superior flavor and earliness. Of his varieties worthy of our trial as soon as they are offered to the public, I have found three of great promise, viz.:

"Standard," a black grape of medium bunch and berry, not comparable in size to the showy fruit of Roger's

well-known blacks, but far superior to them in quality, more of the character of the Delaware.

"IDEAL," of same description, is judged by some as superior to the Delaware, the standard for high flavour.

"JEWEL" surpasses his Early Victor in earliness, quality and size. In view of the encomiums passed on these new grapes by such authority as *Coleman's Rural World*, their trial here is watched with a great deal of interest.

"NORWOOD" originated at a place of that name in Mass., U. S.; bore here last summer clusters of great size and beauty, ripening a few days earlier than Concord, and superior to it in size and quality. The fruit at time of writing, February 12, is well preserved, a point of great consideration in its favour.

"ROCKLAND FAVORITE" (from Ellwanger and Barry), a new Concord seedling, till last year was viewed with some misgivings. It has proved, however, to be an enormous bearer, carrying the heaviest bunches in my vinery. Some earlier and a trifle better than its parent. Early in the season fully one-third the clusters were removed; even then it showed a slight tendency to drop its berry when fully ripe, which was attributable to overtasking the vine.

"PEABODY" (Ricketts') came fully up to its originator's description, viz.: "Hardy; bunch, medium to large; berry, size of 'Iona'; black, with blue bloom; flesh tender, juicy, red and sprightly." Ripened with Concord.

"BELVIDERE" has for some years proved early and very productive here; quality only fair. From the size of the bunch it takes readily in market, though it needs to be picked just as soon as ripe, or it drops its berry.

"EARLY VICTOR" (Burr) cannot be classed as an early, but a medium early variety. Its maturity in a great measure depends on removal of a good proportion of its clusters soon after formed. It is yet a good grape for home use, for table or wine.

"WAVERLY" (Rickett's) is one of the most delicious grapes when properly cared for. Its foliage being weak, it only matures a small quantity of fruit for home use.

"EARLY DAWN" though earlier than the last, has the same trait, quality good, but a poor bearer; scarcely pays for cultivation.

"BURNETT" (Dempsey) did not ripen well this year on account of the very unfavorable season. On ordinary years at this place it proves valuable as a very delicious table grape.

"ROMMEL'S BLACK DELAWARE SEEDLING" bore for the first this year before Delaware, with which it compares favorably in size and quality.

"FLORENCE," comes next to Champion in earliness, is superior in quality, though small, and holds good a very short time.

Of the older varieties

"LINDEN" (Miner) is of no value here, as the fruit when ripe is too acid.

"OTHELLO" is often subject to mildew, and its fruit at best is indiffer ent in quality.

"CANADA" the birds appropriate, and with the two above are to be discarded.

"MOORE'S EARLY" though good in quality, proves with us an unproductive and slow growing variety.

"WORDEN" is growing in popularity yearly and must take the place of Concord in this Province; it is quite as vigorous and productive, and more appreciated for home use and market.

"EUMELAN" is becoming a favorite for home use. It is now twenty years since it was first introduced from the Hudson. Wherever it has given dissatisfaction it may be traced to setting out poor and enfeebled plants at the start.

Aminia, Wilder, Essex, Barry and Herbert, Rogers' famous blacks, are our most valuable varieties, when we consider their fine appearance and good keeping qualities. These hybrids should have made E. S. Rogers, of Roxbury, Mass., a wealthy man, if he had shown the acuteness of the introducers of the Niagara.

For commercial purposes grape growing is not entered into in this Province to any great extent.

SEEDLINGS FROM THE NIAGARA GRAPE.

BY D. W. BEADLE, ST. CATHARINES, ONT.

Mr. Geo. W. Campbell, of Ohio, has been raising some seedlings from the Niagara grape, and thinks that many of them will prove to be more valuable than the parent. It is most remarkable that while the Niagara has a very decided foxy smell and taste, several of the seedlings have been entirely free from this fault, and seem to him to be better in flavor than the parent. The one that he considers to be thus far the most promising bears a large handsome, oval berry, of a light lemon color, and ripens its entire crop while the Niagara is yet hard and green.

A grape of such earliness, if it possessed the requisite hardiness of vine and good qualities of fruit, would be much prized in many parts of Canada. We are yet in the infancy of grape culture. Wonderful strides have already been made in a comparatively short period of time, but the coming ten years will probably give us grapes, of higher quality which will ripen in our northern climate, than is possessed by any we are now cultivating.

What are *our* producers of new fruits doing? We had our Arnold and Saunders and Dempsey, and others. The first named of these is living on the banks of the river that flows amid the groves of that tree which yields its fruit every month; but what of the others? Mr. Bucke, of Ottawa, is in just the climate where by careful hybridizing he should raise a grape as hardy as the northern pine, and as luscious as any we are now growing.

I have two vines of a native Russian grape. They are as hardy as any ironclad, but the fruit is small and not of as fine a flavour as many of the grapes we already are growing. But it seems to me that this Russian grape vine, which ripens up its wood so very early, should be the mother of a race of very hardy grape vines, yielding fruit of superior quality, and which would ripen in our coldest latitudes. This can be soonest accomplished by hybridization. I will cheerfully supply cuttings from these Russian vines to any one who would plant them, and try the effect of crossing with some of our best early ripening grapes, such as the Delaware, Jessica, etc.

Vegetables.

SWEET CORN TESTED.

T. C. ROBINSON, OWEN SOUND.

Our lake climate, with its chilly spring winds and sudden extreme changes of temperature until July, is peculiarly unfavourable for that class of vegetables which requires the whole season and a high degree of heat in the soil as well as in the atmosphere. Hence, Sugar-Corn is a risky crop with most people, except skilled market gardeners, and early varieties are extremely desirable.

With a view of finding out the earliest and best, I experimented last summer with the following kinds:—Cory, Squantum, Marblehead Early, New Self Husking, Perry's Hybrid, Shaker's Early (long grain, from Henderson), Shaker's Early (broad grain, from Vick), Henderson's Sugar, Old Colony, Boston Market, Amber Cream, Asylum, Mam-

moth Early, Triumph, Potter's Excelsior, Livingston's Evergreen, Pee and Kay, Early Minnesota, Moore's Early Concord.

All of these nineteen kinds were planted from 6th to 15th June—most of them on the 10th—except Cory and Marblehead Early, which were planted mainly on May 20th for early market purposes, but some rows of these were also put in at the same time as the other varieties, for purposes of comparison.

The soil was a rather poor, sandy loam, and very little manure was applied; but the cultivation was fair to good, with all except the "Self Husking," Henderson's Sugar," and, I think, "Amber Cream." These got put on new land which grew up so fast with weeds that they had to be left out of the race.

Of the remaining sixteen varieties I got such a good test that I consider I learned all I want to know about all of them except three or four of the earliest.

First of all, to mature for boiling, was the Cory. Planted May 20th, it was ready to market early in August, which, for this lake climate, we consider remarkably quick growth. A few days after, the Marblehead Early came in. It seems to be nearly or quite as large as the Cory. They both have the same fault of redness of cob and frequent redness of grain; and for all practical purposes these two sorts are almost identical, with the exception of the extra earliness of the Cory, which is a most important difference! Soon after the Marblehead, came, of course, the Early Minnesota with its pretty little white cob. This point is a decided merit, but it fails to make up for the advantage over it gained by the Cory, or even the Marblehead, by being in the market a week or two sooner. People will grumble at the Cory's red cob, but they are not willing to wait for the white, and so they buy the Cory and grumble, and buy again—at a good round price too: and when the pretty little Minnesota does come fairly in the price is down. For a limited quantity, the Cory probably pays the best of any corn that grows.

About the time the Minnesota is fairly under way, we come chuckling along with the crop of Perry's Hybird. The appearance of this sort is not to be mistaken. Stalk and leaf and ear-coverings are a dull, greenish-red, which seems rather uninviting. I know of no other variety that looks like it. But the proof of the corn is in the ear, and the ear of the Perry's Hybrid with me was almost fully up to the size of the Mammoth varieties. If both had been grown on rich soil, no doubt the Marblehead Mammoth, Livingstone's Evergreen, &c., would have been considerably larger; but on the poorish, sandy soil mentioned the Perry seemed about equal. The cob of this variety is rather red also; but it has not the deep red which stains the water in cooking and blackens the grain. Particular inquiries of my men who did the peddling, fail to show a single case of customers grumbling at the red cob of the Perry's Hybrid.

Shaker's Early, Boston Market and Moore's Early Concord came in close behind the Perry. The only one that I found to compare at all with Perry was the Shaker's Early—the broad-grained variety, I think. The ear was almost as large, so near it in fact that we could scarcely see the difference, and the cob is white. But the slight difference in earliness tips the balance, in my estimation, in favour of Perry's Hybrid. I only grew a couple of short rows of Shaker's. I grew the Perry in quantity for market; hence, I have confidence in the Perry which I fail to have in the other, and this is intensified from the

fact that Shaker's Early was on first-class soil, while I grew the Perry on both good and bad land. Planted June 10th, Perry's Hybrid matured in quantity for market early in September. I consider it the best early corn tested to follow the Cory, and the *only* main crop variety worth growing in a climate such as that of the Owen Souud District. Early Pee and Kay was about two weeks later, and smaller.

By special favour of the Clerk of the weather, or otherwise, I got a test of Marblehead Mammoth, Triumph, Squantum Sugar, Livingston's Evergreen (an improvement on Stowell's Evergreen), and others. Late in September they made a spurt, and early in October the ears were marketable, and we furnished them to customers until the latter part of October, when patient Winter foreclosed his mortgage and stopped the fun. Of course we had slight frosts before, but a protecting orchard and fences moderated it, so that the corn could grow until, I think, about the 23rd. Generally we get too much frost for corn late in September. Had such occurred last fall my corn experience would have been materially curtailed.

Hence these late sorts will not do for us.

Shaker's Early, Perry, Cory, Marblehead, Early Minnesota, Moore's Early Concord and Boston Market we managed to select ears of on one day that were fit to cook and compare. I tested them carefully when cooked, and found so little difference that my prejudice in favour of Cory and Perry, caused by their remarkably good behaviour as to earliness, size and crop, proved strong enongh to make me think Cory and Perry tasted a little better than the others. Probably most people would be unable to distinguish any difference in the quality of these varieties.

I conclude that whoever will develop a white-cobbed variety of Cory—call it what name he pleases—and the same of Perry, will do the public and himself a benefit. Were this once done, I know of no other varieties worth growing in comparison.

Cucumbers for garden use do much better when on stakes made of portions of trees that afford six inches or so of side branches. They climb small stakes by tendrils, which cannot attach themselves to thick stakes. For cucumbers, therefore, a lot of twiggy brush-wood should be tied around the heavy stake. The cucumber will then climb up easily.—*Gardener's Monthly.*

Celery.—Henderson's White Plume celery is having the effect to make every man a celery grower. Farm hands and day laborers now find ways to have a row of this appetizer in their gardens. How easy the cultivation when good plants can be had. A liberal quantity of old manure is spread on the top of the ground and well spaded in; some necessary hoeing and stirring of the soil after setting; some banking or tying up of the plants—sometimes neither, and last of all the plants are dug up and stood away closely in a box in a cool cellar, and where rats do not molest, and the celery keeps till wanted, sometimes into March.—*The American Garden.*

CELERY LEAF BLIGHT.

A writer in the *Botanical Gazette* writes from Missouri :—

This disease *(Cercospora apii)* annually destroys about one-half the celery planted in this section ; last year (1886) the loss occasioned by the parasite was not so great as in former years, owing no doubt, to the dry weather which prevailed in this section. Frequent showers, and heavy dews followed by hot sunshine favors the

growth of the fungus. The fungus usually appears in this section about the first of July, and at the approach of cool weather, which usually comes on in September, the fungus gradually disappears. When fresh the conidia germinate readily in three hours, by sending out a delicate, colorless thread from each cell. So long as the celery leaves are kept dry, but few of the conidia germinate, but if the leaves are frequently moistened, the fungus quickly destroys them.

Celery protected from the direct rays of the sun, either by natural means, as planting under trees, or by screens made for the purpose, is rarely attacked by the parasite.

In preparing celery for the table, we save the outer stalks not sufficiently blanched to be eaten raw. Clean them and cut them into pieces half an inch long. Stew them in water until tender; drain off the water, add butter, a little flour, and sufficient milk to make a sauce to cover the celery; season with salt and pepper, heat to boiling and serve.

HOW TO GROW ONIONS.

On my farm I keep a heavy stock of pigs and sheep, and make a large quantity of rich manure. By this I mean, that the pigs and sheep are fed on malt sprouts and other food, particularly rich in nitrogen, phosphoric acid, and potash. Notwithstanding this fact, I find great advantage from using, in addition to the farm manure, a liberal dressing of superphosphate and nitrate of soda. I am not a business man, or I should probably keep these facts to myself, and let some men, whom I have in my mind, go floundering in their ignorance and prejudice. It would serve them right. They think they know all about manures, when in fact they know nothing. They put on some commercial manures costing one hundred dollars per acre, when they could get the same effect for less than half the money. Market gardeners sow from one to two tons of commercial manure per acre, costing fifty dollars per ton. They think that it pays. I do not deny it. I only claim that they are working in the dark. It might have paid the Chinaman to set fire to the sty, when he wanted roasted pig. But we have discovered cheaper and better methods of preparing food for the table. And we have discovered cheaper methods of manuring our land, than applying one hundred dollars worth of commercial manure per acre. Try this experiment the coming spring. Get two tons of "blood and bone fertilizer," costing one hundred dollars. Sow it broadcast on an acre of land prepared for onions. On an adjoining acre, sow at the same time:

500 lbs. superphosphate, at 1½ cent per lb.	$7 50
600 lbs. nitrate of soda, at 2½ cents per lb.	15 00
	$22 50

If it does not produce as great a growth of onions as the two tons of raw bone manure, I am greatly mistaken. On my own farm we sow the nitrate two or three times during the growth of the onions. I never saw a finer growth of onions than we had last year and produced in the above way. There was not a scallion in a hundred thousand.—JOSEPH HARRIS, *in American Agriculturist for Jan.*

APPLES.—Those who are fortunate enough to hold choice long keepers can make long prices, sales having taken place during the week of russets and spies at $5.00 to $6.00 per bbl. Less desirable kinds ranging all the way from $2.50 to $4.00 per bbl. Stocks of finest assortment are small and in few hands, and prices are bound to be well maintained.—*Montreal Produce Bulletin, May 19th.*

Scientific.

THE OYSTER-SHELL BARK LOUSE.

(Mytilaspis pomorum.)

Very few have any idea how common a pest this is in our Canadian orchards. Many people are wondering why their orchards are so unfruitful, and why they are so stunted in growth, and look so sickly, when the whole trouble is due to this pernicious little louse, which, unnoticed by them, is preying upon the bark of their apple trees in immense numbers, sucking out their strength and life.

Last summer toward the end of May a neighbor brought in to the writer a branch of a young tree from his orchard asking, "What is the matter with this tree?" The tree would not grow, and he had discovered that the bark was curiously rough with numerous tiny scales about one-sixth of an inch in length, as shewn in fig. 1. Upon lift-

Fig. 1.—Oyster-Shell Bark Louse.

ing one of these scales and using a hand glass the question was soon solved. To his astonishment, there were revealed nearly one hundred wee little lice, too small to be readily seen by the naked eye, and which ran about with the greatest speed over the bark as if delighted at their liberation from the confinement of the maternal shell. No wonder the tree was stunted!

This louse belongs to the genus *Coccidae*, and is allied to the aphis, bed-bug, and body-louse. It was introduced into this country some eighty years ago from Europe, and although the female cannot fly, and hence migrates slowly, it has now become more or less distributed throughout our whole country.

The time to destroy these bark lice is early in the month of June, because at that time the young brood escape from under the scales where they hybernate, and which are actually the dead bodies of the mother lice. The loose bark should first be scraped off with a hoe, because the cunning youngsters hide away carefully beneath it, as if they were trying to escape discovery.

Then the trunks and large limbs must be washed with a strong solution of soft soap and washing soda, with enough water to enable one to apply it with a paint brush, or scrubbing brush. If the lice have spread over the limbs, the whole tree must be syringed with a solution of washing soda and water in the proportion of half a pound to a pail-ful, or potash and water, two pounds to seven quarts. Caustic soda and water is recommended as still more effective.

There are several insects which prey upon the bark louse, as also some insectivorous birds, but unfortunately this hateful insect increases out of all proportion to the number of its destroyers, and unless vigorous remedial measures are employed, some of our best orchards will die of premature old age.

PARIS GREEN AND THE CODLING MOTH.

This month is the time to destroy the Codling Moth, and therefore we may perhaps be pardoned for writing a few lines upon so trite a subject as the use of Paris Green.

That it pays the orchardist to use it has been established by repeated experiment. Prof. Forbes, State Entomologist of Illinois, has proved to his satisfaction that its application will save about three quarters of the fruit usually lost by the work of this insect, and many of us in Canada have become convinced of this statement.

The writer has now used it for two years quite extensively and with excellent results. Last year he applied

it quite early in June, using a Canadian-made force pump, which was found fully as good as Fields force pump, and less expensive. By favor of Mr. Wm. Robertson we here show a cut of this pump.

ROBERTSON'S FORCE PUMP.

The instrument was firmly screwed fast in the end of a kerosene barrel, and the whole arrangement firmly tied fast in an express waggon, by means of four ropes, one attached to each corner of the box. This precaution was most important, for horses are often very timid over the spray, and the noise of the pumping, and most serious accidents might result from carelessness in this respect.

As to quantity, three ounces to forty gallons of water were found to be quite sufficient. It was first mixed with a small quantity of water and then pail after pail poured in until the barrel was full.

Prof. Forbes advises the use of a pole long enough to reach the tops of the highest trees, but surely this would be exceedingly awkward to handle. We question whether the professor ever tried a day's work handling such a pole, say 20 feet long with 20 feet of hose attached to the end. With eight feet of hose and no pole at all, we could force a fine spray over trees 20 feet in height, and surely a pole 10 feet in length would answer for the highest apple trees.

The time of application last year with us was the second week in June, but the time of greatest benefit will of course vary with the season. Repeated applications every two or three weeks as advised by some writers is wholly unnecessary. Once is trouble enough, and fortunately effective if applied when the calyx end of the apple still stands upward; but later, when the apple turns down by reason of its weight, it is of little use. The reason is that the egg of the Codling Moth is deposited in this end, and the tiniest drop of poison lodging here will kill the young larva before it has found its way coreward. Besides, if the poison is lodged in the stem end of the apple it might possibly remain there long enough to destroy lives more precious than that of the hated apple worm.

HYPOSULPHITE OF SODA FOR FUSICLADIUM.

The following letter is in reply to an inquiry concerning the best time and mode of applying the above remedy for the apple scab :—

Sir,—I should think that a fully satisfactory trial of hyposulphite of soda for fusicladium would require that it be used first just as the leaves are coming out, and several times afterward during the early part of the season. The theory of its action is, that it prevents the germination of the spores and establishment of the fungus. The fungus winters over on the bud scales, and is ready to start into active growth as soon as the young leaves are formed. Of course a heavy rain washes it from the tree, and the application

should therefore be renewed as soon after a heavy shower as the tree has become dry or nearly so, if the highest efficiency is to be secured.

It is also a very good plan to spray but half of the tree, in order to have the other half to compare with. If a sufficient number of trees are used, some of them might be totally sprayed, however. It does not seem to me that the results so far obtained are sufficiently positive to warrant one in spraying more of the orchard than is necessary for an ample experiment.

Yours truly,
J. C. ARTHUR.
N. Y. Experiment Station, Geneva, N. Y.

DRAINAGE WATER.

BY C. C. JAMES, M.A., PROFESSOR OF CHEMISTRY.

In estimating the worth of a fertilizer, commercial values are set only upon the nitrogen, phosphoric acid and potash; sometimes the lime is considered. The three first mentioned are of most importance, since nearly all soils contain sufficient of the other plant foods to sustain ordinary crops. To grow crops it is necessary, therefore, to supply nitrogen, otherwise the land will become exhausted. The ordinary crops annually remove from the soil the following quantities of nitrogen per acre:

		Lbs.		Lbs.	Total Lbs.
Wheat.....	(30 bush.)	Grain 33	Straw ...	12	45
Barley.....	(40 "	Grain 35	Straw ...	12	47
Oats	(45 "	Grain 38	Straw ...	14	52
Hay.....	(1½ tons.)	.....		45	45
Red Clover	(2 "	.....		70	70
Turnips.....	(17 "	Roots 63	Tops	45	108
Mangels....	(22 "	Roots 85	Tops	46.5	131.5
Potatoes...	(6 "	Roots 42	Tops, etc.	18	60

The rain carries into the soil from the atmosphere every year from five to ten pounds; other sources of supply besides that of direct applications of a nitrogenous fertilizer are, as yet, somewhat uncertain.

The nitrogen, however, before it is in form available for the plant must be converted into a *nitrate*, a compound resulting from the union of nitric acid with some such substance as lime. This formation of nitrates in the soil is called *nitrification*, and producing the various fermentations. It is found in all fertile soils, and for its development and work demands a supply of air and water. Tillage therefore assists in the process. The presence of too much water excludes the air and hinders the work, even undoing it. Drainage therefore increases the range of nitrification and deepens the fertility. A proper degree of heat is also most important. Nitrification ceases below and near the freezing point. As the temperature rises to 98° Fahrenheit activity increases. From that point it again diminishes to about 131° when it ceases. Under these conditions nitrification proceeds most actively during the summer, and continues even into the autumn. The nitric acid thus formed unites with lime principally, forming nitrate of lime, or *calcium nitrate.*

In the spring there are few, if any, nitrates to be washed out of the soil; in the summer there is but little, if any, drainage to wash out the nitrates; in the autumn, therefore, when nitrates have accumulated and drainage is also abundant, we may expect the greatest loss.

The following may be practised either to clean dirty land or to rest exhausted land: In the former case, to avoid excessive loss by drainage, recourse may be had to roots *thoroughly cultivated.* To improve an exhausted land, instead of allowing the land to lie fallow a whole year, a green crop might be plowed under, thus keeping all the nourishment in the soil, increasing it by drawing on the air and subsoil, and by decreasing the drainage. For green manuring, red clover, rye and buckwheat are especially recommended; other

crops such as rape, white mustard, scarlet clover, etc., are also used. These should be plowed under just before full blossom.

On the whole most soils will improve best under a combined treatment of green manuring and fallowing, where resort is necessary to such treatment. —*From Bulletin IX., Agricultural College, Guelph.*

LIQUID MANURE.

There are quite a number of farmers within our acquaintance who save all the urine of their stock, and find a profitable use for it by applying it from a sprinkling cart to their grass fields. But they have found that some precautions are needed. The best time to apply it is when the young grass is starting vigorously, and there are frequent showers—or, say, about this season of the year. Four or five hundred gallons to the acre, applied in this way, will give a very heavy growth, without other manuring. The rankness of leafage and the dark color which the grass almost at once takes on, indicate an over-supply of available nitrogen in this urine, and a continuously urine-dressed grass plot tends to run into a rank, weedy growth. The trouble here arises, as we have shown in previous articles, from the excess of nitrogen over phosphoric acid in urine. A field laid down to grass, with the view of applying liquid manure as a top-dressing, should have about 400 pounds of finely ground steamed bone per acre harrowed in on the furrow before seeding.

* * *

In beginning to use a new fertilizer, we must be sure we are using it correctly, before we hasten to condemn it. There is abundant evidence of the fertilizing properties of liquid manure. Many gardeners depend upon it almost wholly to force forward their crops. If at first an experimenting farmer does not succeed, we advise him to look the matter over, and "try, try again." There is a great deal to be learned about farming yet, even by the oldest of us, and both brains and knowledge are necessary to enable any of us to keep near the head of the procession.—*Dr. Hoskins in Rural Vermonter.*

Paris Green, says the Chicago *Inter-Ocean*, should be used with the utmost care, when applied to the potato vine, as it does sometimes poison the tubers. The effect upon persons eating a potato so poisoned is to produce dryness of the throat, intense thirst, and violent pains in the stomach.

We doubt whether such danger need be feared except in cases where the tubers are above ground, as the arsenic is neutralized by the soil as soon as it is mixed with it. Have our Canadian growers any caution to give us?

Open Letters.

ENCOURAGING.—SIR, It would give me much pleasure to see the circulation of the *Horticulturist* very largely increased. I have seldom let an opportunity slip of saying an earnest word in its favour, having found it exceedingly interesting, and *quite practical throughout.* Yours,

LEONARD H. WILDER.

Cooksville, Ont.

WYLIE'S SEEDLING PLUM.—SIR, I send two or three of my young red plum trees that I wrote you about last fall. If you will plant them you will find them grow very fast and be very productive, and the fruit is large, juicy, and pleasant. It does well here in clay loam, and bears early. Fruit ripe in August. I will send you some fruit as a sample this year.

The tips, at least, of my Lombard and Moore's Arctic plums are gone this spring. The winter was very severe. Yours, &c., W. H. WYLIE.

Carleton Place, Ont.

USE FOR OLD STRAWBERRY BASKETS.—SIR: Last year I planted out 1000 cabbage plants. "He that observeth the wind shall not sow," so I set them out when they were ready. The day was bright, and before night they were a long way off the perpendicular. I had as many old strawberry baskets at hand with which I covered them. My plants in a few hours were started for life, the baskets none the worse. Unless your readers fancy working in the rain, they will find the plan a good one.

J. C.

Aultsvile, April, 1887.

IMPROVING.—A Seaforth subscriber writes:—SIR: I had little notion of becoming a subscriber this year, but I have received five numbers, and I think they are an improvement on last year's. I get some useful hints in them which makes them interesting.

[This is a sample of many letters which have been received. It is certainly the wish of the Directors to make each volume of our Journal better than its predecessor, until no Canadian farmer or fruit grower can afford to do without it.]

FARMERS' INSTITUTES.

The Editor Canadian Horticulturist.

I was interested in a note on *Farmers' Institutes* in the May number, and as it corresponds to views too often expressed in essays and in print, I may be excused for briefly referring to it. The "notion" referred to is as follows, that the so-called uneducated man is *practical*, while the college professor is *theoretical*. In this case the term *theory* is often applied in the sense of *reason*, words of a very different signification. No doubt some college professors deal too much in theories, and some of the other class are truly practical. I have attended a very large number of gatherings where both of the classes above named took an active part, and in my judgment the college man is beaten out of sight in the number of theories offered by the so-called practical man.

W. J. BEAL.

Michigan Agricultural College,
10th May, 1887.

HARDY APPLES—A CORRECTION.

The Editor Canadian Horticulturist.

DEAR SIR: My article from the *Am. Garden* was quite incorrectly quoted in the May *Canadian Horticulturist*. In the fifth line "two" should be *true*. Yellow Transparent and Oldenburgh *are* true ironclads; while Shiawassee Beauty is entirely distinct from the Fall Queen—hardly any two apples more so in all points. If Westfield Seek-no-Further does not suit your locality, I would strongly advise trial of McClellan; and also of Salome, a newly introduced Illinois apple, hardy, but not ironclad, and a very productive and salable market fruit, which I should prefer to the American Golden Russet. Tinmouth is well worth planting as a choice family apple, and Nodhead (Jewett's Fine Red) has few superiors in its class of early winter apples. Yours truly,

T. H. HOSKINS.

Newport, Vt., May 11, 1887.

[NOTE.—We regret the omission of the word Haas after Shiawassee Beauty on p. 101, which in the article referred to is correctly given by Dr. Hoskins as another name of the Fall Queen. The apple has been largely sold in Canada under the name of Haas. It is also known as Gros Pommier.—ED.]

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.

47. Salt as a Fertilizer.—*Please let me know through your paper whether salt is good for strawberry plants set on heavy land.*

[W. A. Smith, Coverdale, N.B.]

Prof. Panton, of Guelph, would not advise the use of salt for strawberry plants on such soil. He recommends a liberal application of wood ashes as being an excellent fertilizer for the strawberry bed.

A writer in the *Country Gentleman* says:

"Salt should not be used on cold, heavy or moist soils, and if any one does, he will be disappointed in the result, as its tendency is to keep the ground cool and moist. It will do such soil more harm than good.

"I do not think salt is much of a fertilizer in itself, though plants take it up, as you can tell by tasting and by the stiffening and glazing of straw of a plant grown in salted ground. I think it acts upon and assimilates the gross matter in the soil so as to make it available food."

48. Red Spider.—*Does it destroy the bark louse.*

It is thought to hybernate under the scale of the bark louse, but not to be parasitic upon it.

49. M. P. Wilder Rose.—*Do you know if the Marshall Pinkney Wilder Rose can be bought in Canada?*

[L. H. Wilder, Cooksville.]

Mr. Frederick Mitchell, Innerkip, writes that he is propagating a limited number. He says it is a thoroughly good rose, no other possesses more good points, but its similarity to Alfred Colomb detracts from its value as a novelty.

50. Aphis on Roses.—*What do you find most effective in the destruction of the rose aphis?* [W. F. Burton, Hamilton.]

Reply by D. W. Beadle.—I have found tobacco water, made by soaking stems of tobacco in a pail of water, applied with a garden syringe an effectual cure, killing the aphides. It may be necessary to go over the rose trees two or three times before the insects will be all destroyed.

Some care must be taken lest the infusion be so strong as to injure the foliage of the roses. The addition of whale oil soap is recommended by many, but I have found the tobacco water quite sufficient.

[Note.—A writer in the *Horticultural Times* (Eng.) says he has used hot water (150°) upon his chrysanthemums for the destruction of the black aphis with excellent success; and that the plants, instead of being injured, were induced to a more healthy growth. —Ed.]

51. Effect of Cold Water on Plants. Sir: *I have the city water in my garden, and last summer being unusually dry, I was compelled to use the water freely, but the results were so unsatisfactory that I am now of opinion that the water was too cold, and therefore checked growth and, consequently, productiveness. 45° is the present temperature of the lake water taken at the hydrant, but I fear to use it, although the soil is light and needs water badly. Will you please give me the temperature below which it would not be prudent to apply the lake water to vegetation?* [J. L. Thompson, Toronto.]

Reply by D. W. Beadle.—It is thought desirable to have the temperature of the water raised by allowing it to stand in an open tank, where it will have the full benefit of the sun all day, and apply it at evening. I have never

tested the water used in watering my plants with the thermometer, and cannot give the proper temperature in degrees. My own impression is that it is of less consequence to raise the temperature of the water than is generally supposed. I have used the city water here (St. Catharines), direct from the hydrant, without perceiving any injurious effects. But I apply it early in the morning—about sun-rise –and allow the sun to warm it as it ascends towards the zenith. Nor has enough been used to keep the temperature of the soil abnormally cold. Perhaps a liberal application of stable manure would render the soil less thirsty.

REPLIES TO PREVIOUS INQUIRIES.

45.—Quart Boxes.—Mr. W. B. Chisholm, Oakville, who advertises in this number, says: "Re M. E's query in May No. I would say that we can make quart baskets, or any other size to order, providing a little time is given us.

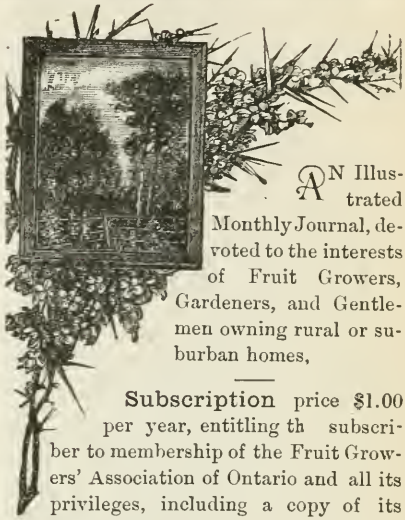
Messrs. A. C. Rice & Co., Sarnia, also write: "We make the full quart, the same as are used in the States. We ship them either flat or made up."

Privet makes a very good ornamental hedge, where ornament only is the object. The chief objection we have to it is its rapid growth, requiring rather frequent clipping during the busy season of the year; but if trained in a conical shape the work is much less than if trained with a square top. A writer to the *American Garden* recommends the California privet (*Ligustrum ovalifolium*), and the common kind (*L. vulgare*), to be planted thickly together. He says they make a perfect thick green wall of a hedge.

Another pretty plant for an ornamental hedge is Spiraea Van Houtti, one of the prettiest, as well as the hardiest of the Spiraeas.

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 th 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 knowdge concerning 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 cooperation 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.

Paid 86 on your label shows you have not paid for year 1887; but unless the remittance comes to hand by the 20th of one month, the label cannot be changed until the second issue following.

50 cents for 8 months.—This Journal is offered for eight months, beginning with May No., to new subscribers, for 50 cents. We hope all friends of the Association will take this opportunity to increase its usefulness by largely extending the circulation of the *Horticulturist.*

Bound Volumes of this journal may be had in cloth at $1 each from this office. Vols. VII., VIII. and IX. have colored plates ; Vols. I. and II., and Vols. III. and IV., not having colored plates, are bound together and sold as one volume.

Shorthand Wreckers, is the caption of an article in the *Cosmopolitan Shorthander* which rather interests us. In it the Fruit Growers' Association is compared to a noble ship, and the reporter of our Winter Meeting at Stratford to a wrecker who, under the guise of a skilful mariner, undertook to navigate into the fair port of Brevier the stately vessel. It gives examples of a few of the pieces of wreckage, only too familiar to the Secretary, and which may interest some others as literary curiosities. Here are some specimens :

" 'Mr. C.—What do you find hardy here and make nice plants ?

Mr. A.—What Mr. B. said. I think the Norway Spruce is a very good tree, it makes a good protection. The English Thorne the insects seems to destroy the leaves, and it doesn't seem to stand the spring frost.

Mr. C.—Have you tried Veitchii ? Lilacs are all hardy.

Mr. F.—How is Japanese Snow Balls ?

Mr. E.—Can you grow Sponkers ?

Mr. A.—They grow very little.

Mr. C.—I think with Red Cedar or Arbor Vitæ.

Mr. B.—I like Red Cedar.

Mr. D.—The question by the Secretary to that unpronounceable word Veitchii, that is not hardy. I was a little erratical about that. It killed within four or five inches.

Mr. B. * * * I was very much amused when in the west on passing a large wheat field to see some two or three hundred head of cattle having the peculiarity of our cows. There was no dash, nothing of the sort, they were in a good pasture field. There was no trouble of them getting across the line, and seeing that these cattle were not scattering through this large wheat field ; looking for a little distance I saw some of the native ponies with little boys on them, they were a short distance away, if the cows moved oway from the rest they would give a peculiar whistle that made the cow turn tail back. There is wire fences there.'

These extracts may serve to still further explain the reason why our Report for 1886 is so much smaller than usual. We could not avoid crossing out page after page of such nonsense, and then we made the best sense possible of the rest.

We are glad to be able to announce that the services of Mr. Thos. Bengough, official reporter, Toronto, have been engaged for our summer meeting at Collingwood. It is only neccessary to mention this gentleman's name to assure our readers of a faithful report of the meeting.

The next Biennial Meeting of the American Pomological Society will be held at Boston, commencing on Wednesday, September 14, 1887, at 10 a.m., and continue for three days.

The venerable President, M. P. Wilder, had hoped to live to meet his friends once more so near home, but his life was not spared to realize this ambition, to the great regret of all concerned. In the meantime, Mr. P. Barry, of Rochester, the First Vice-President, is called upon to fill the President's office.

All horticultural, pomological, agricultural and other kindred associations in the United States and British Provinces are invited to send delegates.

The Massachusetts Horticultural Society has appropriated the sum of $500 to be offered in special prizes for fruits to be exhibited during the meeting.

The Balsam Fir and the Norway Spruce are both severely condemned by the *Rural New Yorker* for ornamental planting.

We have long ago discarded the Balsam Fir as being one of the most unsatisfactory of evergreens. When it reaches the age of fifteen or twenty years it is easily blown over by the wind, especially if grown in light soil; and it has an ugly habit of thinning out at the base, which makes it most unsightly. We would not plant it again even in the most remote corner.

Possibly the *Rural* is right also in condemning the Norway Spruce, but we are not prepared to join in so doing. All over Ontario it is the leading evergreen for shelter and ornament, and still very popular. We have a hundred or more about our grounds, many of them twenty-five or thirty years planted, and towering up about thirty feet in height. Except that we have too many of one kind for good taste, we have as yet no cause for regret concerning them. Their colour is good, they spread out their long limbs some ten or twelve feet in every direction, from which hang the most gracefully drooping branches, and there is no thinning out at the bottom.

Perhaps when they reach the age of fifty years or more, we may have occasion to change our opinion, but, if so, it will be with great disappointment when we consider that, not only the writer, but farmers and fruit growers generally throughout our Province, have been planting the Norway Spruce most extensively for windbreak and for ornament, and that, too, acting upon the unqualified commendations of all our leading horticultural and agricultural journals.

Possibly this evergreen is better adapted to our Canadian soil and climate than it is to Pennsylvania, Ohio, Long Island and Illinois, from which States the loudest condemnations arise.

As substitutes for the Norway Spruce, Josiah Hoopes recommends the varieties of spruces technically known as Picea pungens, P. alba, P. orientalis, P. polita and P. alcoquiana.

Arbor Day. *The Educational Journal* for May 1st is largely occupied with plans for the successful conduct of Arbor Day. The setting aside of one day in the year for the decoration of school grounds is certainly most commendable; but the most difficult part still remains, viz., to so direct the army of little workers as to make it a time of real profit.

That it may become an educative power, it will be necessary to have the teachers themselves regarding the grouping and planting of ornamental trees and shrubs, the proper method of making a good lawn, both by seeding and by sodding, and the tasteful laying out and planting of flower beds.

People generally are lamentably ignorant, too, of even our most common native trees and shrubs, and a named collection of these in our public and high school yards, would be of great educational value, especially if the teacher were qualified to instruct his scholars concerning their habits and uses on each returning Arbor Day.

The delay in the distribution of plants this spring has caused us no less anxiety than it has our readers who have been flooding our office with impatient inquiries. We beg to reply to one and all by saying that the orders were placed in the hands of our most reliable Canadian nurserymen about the middle of April, and we had hoped for immediate attention; but to wrap these premiums one by one for two or three thousand members of our Association is no small undertaking. We must therefore "bear and forbear."

Messrs. Smith & Kerman, of St. Catharines, who mailed the Niagara Grape, write as follows: "Sir,—We are sorry that we could not have got

the vines off before; but they are nearly all gone now. We suppose most people don't know that grape vines may be planted later than anything else. We shall have 100,000 to plant after we get through mailing, so you can see we have not served ourselves first. Should any fail to grow we will replace them next fall or spring, gratis.

THE ENGLISH SPARROW.

A subscriber in St Thomas sends us a plea for the sparrow, cut from the St Thomas *Times*. The writer pleads in their favour first that they make delicious pies, and second that they kill May bugs, and peel off the wing covers to prepare them as food for their young. He also pleads that they destroy the plum curculio.

Such pleas in its favour are very scarce. The general testimony of fruit growers and farmers both in the United States and Canada, is that they are perfect nuisances, and one of the greatest enemies we have to contend with.

Only the other day we discovered these scoundrels in a fresh sort of mischief. The plum and cherry blossoms were coming down like snow. It was too soon after opening for them to fall naturally, so we stopped to examine, when lo! two sparrows, as busy as busy could be, picking out the young plums and scattering the waste part of the flower to the ground.

Others may need to try the miserable foreigner a little longer, before they are convinced of his mean spirit, but the writer has determined to show him no mercy.

A LETTER FROM J. J. BOURNE.

SIR:—In the February number of your paper, a letter appeared from me in reference to Messrs. Jackman & Lindsay, of Toronto. I have been in England since, and I am informed that Jackman & Lindsay complain that my letter may in some way injure them in their dealings with fruit men, and bears the construction that I think they are unreliable and do not act honestly. I never intended what I wrote you to be published in the *Horticulturist*, and much less did I wish to hint that I thought the said firm dishonest. All I had to complain about was that I thought each day after fruit was sold, the commission merchant should send word to the shipper, by post card or otherwise, of the result of the fruit sold, so that the shipper could judge for himself where was his best place to sell. Some other commission houses do this, and I think all should do so. This firm did not do so to me, but they have honestly accounted for all fruit I sent them, and I have no complaint to make except in the one direction I have alone referred to. That is, perhaps, a matter for their own business; but I merely intended that I thought all commission men should adopt this good plan. If I have injured them, I did not wish to do so, and still hope they may do a good business.

May 25, 1887. JOS. BOURNE.

PROGRAMME OF THE SUMMER MEETING

Of the Fruit Growers' Association of Ontario, Town Hall, Collingwood, June 28 & 29, 1887.—Open to the Public.

WEDNESDAY MORNING.

10 A.M.—FRATERNAL GREETINGS.
APPOINTMENT OF COMMITTEES.

11 A.M.—THE APPLE.
(*a*) *Varieties adapted to Simcoe and Grey.*

WEDNESDAY AFTERNOON.
QUESTION DRAWER.

2 P.M.—THE APPLE.—(*Continued.*)
(*b*) *Varieties for foreign markets.*
(*c*) *Best modes of gathering.*
(*d*) " " *packing.*

(*e*) *Best modes of storing.*
(*f*) *Cultivation of the Orchard.*
(*g*) *Fertilizers for the Orchard.* [*Paper by Dr. Hoskius, Newport, Vt.*]
(*h*) *Summer pruning of* "
(*i*) *Drainage of the* "

INJURIOUS FUNGI, *with special reference to the Black Knot and Apple Scab.* [*Paper by Prof. Panton, of Guelph Agricultural College.*]

WEDNESDAY EVENING.

QUESTION DRAWER.

8 P.M.—THE FOREIGN MARKETS.

[Subject introduced by the President].

(*a*) *What fruits and vegetables can be profitably shipped.*
(*b*) *How to pack for foreign markets.*
(*c*) *How to ship.*

THURSDAY MORNING.

QUESTION DRAWER.

10 A.M.—THE PLUM.

(*a*) *Kinds which succeed in Counties of Simcoe and Grey.*
(*b*) *Care of a Plum Orchard.* [*R. J. Doyle, Esq., Owen Sound.*]
(*c*) *Packing for the Market.*
(*d*) *Yield per acre.*

THE STRAWBERRY.

(*a*) *Extent of Strawberry Plantations in the Counties of Grey and Simcoe.*
(*b*) *Best early variety.*
(*c*) *Best variety for main crop.*
(*d*) " " " *table.* [*T. C. Robinson, Owen Sound*].
(*e*) *Cultivation and Fertilizers.*
(*f*) *Gathering.*
(*g*) *Packages.*
(*h*) *Newer Varieties.*

THURSDAY AFTERNOON.

THE QUESTION DRAWER.

2 P.M.—LAWNS AND LAWN DECORATIONS.

Groups of Shrubbery—suitable for this latitude.

ORNAMENTAL TREES.

(*a*) *Shade.*
(*b*) *Shelter.*
(*c*) *Ornament.*

THURSDAY EVENING.

PUBLIC MEETING, 8 P.M. FREE TO ALL.

Ten-minute addresses will be given by various speakers. The President will speak on "The Colonial and its Benefits to Fruit Growers." Music will be furnished by local talent.

Papers and addresses are expected from other gentlemen whose names we are not yet prepared to give.

A committee will be appointed to examine all fruits or flowers which may be placed upon exhibition during the meetings, and to report thereon. Packages of fruit for exhibition may be sent by express to the care of the Secretary of the Fruit Growers' Association, Collingwood. Ont.

First-class accommodation may be had for all in attendance, at the Central Hotel, or at the Globe Hotel, at the reasonable rate of $1.00 per day.

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.

Transactions of the State Agricultural, Horticultural, Dairyman's Association, and Department of Agriculture of the University, Wisconsin, 1881-2, 1883, 1884, 1885, and 1886. Clinton Babbit, Beloit, Secretary.

These five volumes are neatly bound in cloth at the expense of the State, and are full of interesting matter. In the Agricultural Report we notice a valuable paper by F. H. King on the Economic Relations of Wisconsin Birds, which deals largely with the food upon which they subsist, showing conclusively what birds are positively beneficial to the farmer and to the

fruit grower. In the Horticultural Report are papers on such subjects as "Horticulture as an Educator," "First Principles of Flower Culture," "Small Fruits," "Our Russian Fruits," "Home Adornment," "Farmers' Garden," "Mechanical Injuries to Trees by Cold," "Raising Seedling Strawberries," etc.

Transactions of the American Horticultural Society for the year 1886. Parker Earle, Cobden, Ill., President; W. H. Ragan, Greencastle, Indiana, Secretary.

The following are the titles of some papers included, viz., "Nut Culture for Pleasure and Profit" (Lovett), "Small Fruits in New England" (Hale), "Better Culture of Grape Vines" (Campbell), "Selling Fruits by Auction" (Corsa), "Orchard Rusts" (Seymour).

Twelfth Annual Report of the Ontario Agricultural College and Experimental Farm, 1886. James Mills, Guelph, President.

The report of the Professor of Natural History, contains much that is interesting to horticulturists, as for instance the results of six years testing of some four hundred trees and shrubs planted on the College grounds, and of five years testing of some ninety-six varieties of grapes.

Bulletin of the Iowa Agricultural College Experiments. Ames, Iowa, 1886.

Contains some valuable notes on the habits and uses of various grasses.

Journal of the Columbus Horticultural Society, published monthly. W. S. Devol, Columbus, O., Secretary.

This interesting little monthly is published at 50c. per annum by the Society.

Agricultural Science. May, 1887. Published at Geneva, N.Y., at $2 per annum.

A high-class journal, edited by Charles S. Plumb.

Practical Turkey Raising, Chicago, 1887.

A pamphlet compiled by R. B. Mitchell, 69 Dearborn street, Chicago. Price, 25c.

List of Premiums of the Montreal Horticultural Society. E. J. Maxwell, Secretary.

The Exhibition will be held in Montreal, in July, September, November, 1887.

Humorous.

THINGS ONE WOULD RATHER HAVE LEFT UNSAID.

Herr Professor—"Vat a vonderfoll Dree!"

Lady Godiva—"Yes; isn't it. I love it better than any tree in the place. It's full of sweet and tender associations for me!"

"Herr Professor — "Ach! Zoh! Your Latyship has perhaps blanted it yourzellff! Yes?"—*Punch.*

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The Canadian Horticulturist.

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Flowers.

THE CLEMATIS.

THIS beautiful climber has already received considerable attention in this journal. In volume VI. our readers have seen a plate of that beautiful native of Texas, the *Clematis Coccinea*, shewn also in our engraving as No. I. Its flowers are orange scarlet, and though not large, the peculiar shape and profusion of bloom make it a very decided acquisition.

In volume VII. a fine colored plate of *Clematis Jackmani* was given, so called from Mr. Jackman, an English nurseryman who claims it as his hybrid, a cross between the Spanish Viticella and the Chinese lanuginosa. It is this Clematis that we again bring before our readers, shewing what a charming effect may be produced by training it about on upright trellis on the lawn.

The Clematis belongs to the Crowfoot family—a family which includes also the Columbine, the Larkspur, the Pæony, &c.—and about one hundred varieties have been found growiug wild in various parts of the world, while hybridization and cultivation has more than doubled this number. It first attracted general attention in the year 1859, when *Clematis Viticella* was introduced into England from Spain, and soon became a general favorite; and out of compliment to the then reigning monarch who delighted in the title of "Virgin Queen," it was named the Virgin's Bower. About the same time a native of England, the C. Vitalba, was brought into cultivation. It had several common names, as, for instance, "The Traveller's Joy," from its being frequently found by travellers,

climbing upon the hedges; and "Old Man's Beard," or "Cigar Plant," from its feathery styles, which were so curious after the flowering season was over.

Clematis flammula, commonly known as the "Sweet-scented Clematis," was next introduced from France, and is still popular, on account of its frag-

CLEMATISES.

(1) *C. Coccinea*, (2) *C. Crispa*, (3) *C lanuginosa*, (4) *C Jackmani*.

rance. *C. Virginiana*, an American species, is also still propagated by florists, being esteemed as one of the best of our native white sorts: but its size and beauty is far eclipsed by *C. Lanuginosa*, (No. 3) a Chinese variety, with flowers of a pale lavender color, and measuring from 6 to 8 inches across.

In 1863 a fine double white sort was sent over from Japan by Mr. Robert Fortunei, and named C. Fortunei after this gentleman. Though somewhat fragrant, it is surpassed in this respect by the *Duchess of Edinburgh*, which is now counted the best double white variety, and is deliciously scented.

Of all these varieties, however, none is so deservedly popular, whether for covering lattices, climbing over porches, or poles, twining about a rockery, or trained as a bedding plant, as Clematis Jackmani, and since its introduction in 1868, has been a means of stirring up a great rage for the Clematis as an ornamental climber.

Mr. W. E. Wellington says of this variety: "The plant is free in its form of growth, and is an abundant and successional bloomer, producing flowers until frozen up. The flowers are large, of an intense violet-purple, remarkable for its velvety richness;" and speaking of culture he says: "It will grow in almost any soil, but prefers a rich loam. As with all free-blooming plants, if you would obtain good results, you must give it plenty of food to live upon. For that reason I would always mulch freely in the spring and autumn. Neither is it amiss to feed it with liquid manure during the summer. In regard to keeping in the winter, in order to get its best results, I would leave from two to three feet of old wood. This I would lay down and cover with a board, and throw a little soil over it. By this treatment more profusion of bloom will be obtained."

Clematis Crispa (No. 2) is a most beautiful and distinct species, the flowers resembling in shape some of the elegant bell-shaped lilies. The coloring is of the most beautiful lavender blue tint on the surface and margins of petals. The centre of the petals is an opaque white. The flowers are of a thick leathery texture, perfumed with

a delicious bergamot flavor. Hardy and very free flowering, continuing from June until frost.

CLEMATIS LA FRANCE.

This is the name of a new variety of Clematis that is the produce of a cross between C. lanuginosa and C. Jackmani, and which has been described in a late number of the *Revue Horticole*. It was originated by M. Gegn, horticulturist, of Angers, France. The journal above mentioned says that it is truly a plant of unusual merits, and which once more puts beyond doubt the influence of artificial pollenizing, and shews what can be done in this manner. In effect, Clematis La France, hybrid of C. lanuginosa and C. Jackmani, possesses the general characters of both these plants. It has the habit of growth of C. lanuginosa, that is to say, that it blooms continually, like the last, aud that it has its vitality and its general appearance; as for the flowers, by their dimensions, their form, their nature, they recall those of C. lanuginosa, are more abundant and have taken the beautiful deep violet color of C. Jackmani.—*Vick's Magazine for November.*

CARE AND CULTIVATION OF LILIES.

BY H. SIMMERS, TORONTO, ONT.

Among all the varieties of bulbs the lily is probably the one most difficult for the amateur to rear. The bulb itself being of a soft, spongy material it does not stand the ordinary handling that other bulbs can stand; therefore the more beautiful varieties, such as appeared in the colored plate of the June issue, are not usually tried by the amateurs, but with the few suggestions that I will give they will find it comparatively easy. Another reason also is that the more beautiful varieties do not propagate so easily, and for this reason are, as a rule, sold at much higher prices. With, however, some of the commoner varieties, such as the Lilium candidum, there is very little difference in propagation, as they increase almost as quickly as ordinary bulbs.

As the colored plate of June issue showed us three beautiful varieties, I will confine myself to these in this issue, and will speak of other varieties in another issue. The variety which will at all times attract the amateur most is the Lilium Auratum, called

LILIUM AURATUM, AS GROWN ON THE LAWN.

Golden-rayed Japan, also "The Queen of Lilies." This variety has been so very often tried without success that the amateur has given up in despair, mainly I believe on account of not handling them properly. The proper mode of planting these in the open air is to select a sandy-loam soil in a perfectly open aspect, planting the bulb six inches below the surface, then, if you have a good sound bulb, it is sure to bloom. The reason for planting in a sandy soil is that they are not so

liable to rot as if planted in heavy soil, the tender shoot thrown from the bulb not being able to penetrate the coarse, heavy soil as well as the sandy soil. Again, the reason for planting the bulb six inches below the surface, is that it will remain in the ground all winter without being covered, whereas many amateurs plant them about two inches below the surface, and cover with straw during winter, but in my experience, and I have tried both ways, I find the deep planting is preferable. Another very good plan to raise Lilium Auratum, and one that the amateur would probably prefer, is to plant the bulb in a pot, in months of January, February or March, keep in the cellar and treat similar to the Easter Lily, as previously explained in one of the back issues of the *Horticulturist*, with the exception that not so much water is used, only keeping it constantly moist. L. Lancifolium roseum and Lancifolium album are treated in a similar manner to the L. Auratum, but are not so easily grown in pots. In Holland, where acres of lily bulbs are grown, the soil is exceedingly sandy, being however well enriched with manure.

THE ROSE OF ENGLAND.

Sir,—The enclosed lines were written in my manuscript book now over thirty years ago, by one of my lady friends ; and as it has never, I think, seen printers ink, I thought it might not be unacceptable to some of my fellow English colonists who are readers of the *Canadian Horticulturist.* This is my apology for sending them.

Yours &c., J. BISSELL.

Meaford, Ont.

HAIL beautiful rosebud ! Queen of the flowers,
The glory of England, the pride of her bowers,
The brightest and fairest of Flora's gay host.
The cotters delight, his glory and boast
To plant it with care round his happy home,
There to blossom and die, with no wish to roam
From the peaceful haunts where his children play,
Breathing its perfumes the livelong day.

It blooms in the bowers of the lady fair,
Scenting with odorous sweetness the air,
Tis dear to her heart, and she owns with a smile,
Tis the favourite flower of this favoured Isle.

How varied its dyes from the rich red glow
To the spotless rosebud as white as snow,
Which young maidens gather in girlish pride
To garland the brow of their sister bride.

* * * * * *

In childhood I loved it, and tended with care
The flower of old England, the rosebud so fair.

Then say ! are the flowers of England more fair
Than all the gay flowerets that perfume the air,
Unfolding their leaflets in gorgeous array,
Neath the tropical skies of a summer's day ?
Oh no ! for the same Great Being made all—
The scentless, the scented, the great and the small,
And fixed the abode where each gem may shine ;
So we all love the flowers of our own native clime.

Then, of all the dear homes of this beautiful earth,
Happy England for me, the land of my birth ;
Then Brittania's bright rosebud I hail with a smile,
The Flower of my country, the pride of our Isle !

MILDEW ON ROSES.—An exchange recommends sulphate of potassium as effectual ; half-an-ounce to a gallon of water.

THE ROSE is the most highly prized, and, next to the Geranium, the most generally cultivated flowering plant. These remarks apply to amateur cultivation. Professional florists make rose-growing a very prominent part of their business, and immense quantities of flowers are raised during the winter season for cutting. The statement is made by a competent authority that in 1885 " the trade sold twenty-four million cut Roses." This indicates, to some extent, the popularity of this particular flower.—*Vick's Magazine for June.*

THE JARDIN ANGLAIS, GENEVA.

BY JAS. CROIL, EDITOR PRESBYTERIAN RECORD, MONTREAL.

THIS is, to Geneva, what the Thames Embankment is to London—a large emplacement reclaimed from the water, and converted into a beautiful garden. As nearly as I can learn, this was done some thirty-five years ago ; a time at which a large sum of money, levied on the municipality, was expended in improving the city : and it was certainly done in good taste. I am sorry I cannot give such a description of the garden as I could wish, for I am not a

botanist, nor a florist, and, besides, you must remember it is winter, and winter in Geneva means death to flowers. The Jardin Anglais is so called because it is laid out after the manner of English landscape gardening, which, as you know, is much more free and easy than the French style, with its stiff and painfully regular mathematical lines. It is 1,200 feet long, and about 325 feet wide. It lies at the foot of Lake Leman, on the south side, just where the "arrowy Rhine" leaves it on its journey to the sea and the sunny south. On the one side it is bounded by the waters of the lake, as blue as indigo; on the other by a wide and handsome street of very lofty houses. It is well stocked with trees and shrubs, and further adorned with broad winding gravel walks and elaborate flower borders. The first thing that attracts attention upon entering it is the

NATIONAL MONUMENT,

erected by the citizens of Geneva, to commemorate the reunion of the Canton of Geneva with Swiss Confederation, effected on the 12th of September, 1814. This consists of two colossal female figures in bronze, clasping each other around the waist in a most friendly fashion. Both are draped in flowing robes. Geneva has a castle for her crown, wears a corslet of chain armour, and holds in her right hand a drawn sword. Helvetia, representing the Confederacy, has her brow adorned with a laurel wreath, her bosom is bared and her sword is sheathed. Each has buckled on to her right and left arm a shield, emblazoned with the arms of the city and the canton respectively. The city arms have a large key and a crowned eagle, above which are spreading rays, as of the rising sun, in the centre of which are the mystic letters I.H.S., and the motto of the city, "*Post tenebras lux.* The other has the Maltese cross, with this motto: "*Un pour tous et tous pour un.*" Near the centre of the garden there is a beautiful fountain in bronze. On either side of it bronze busts on marble pedestals to F. Diday, 1802-1879, and Alexandre Calaine, 1810-1864. That is all that is said about these gentlemen, who, doubtless, were notable men in their day. Besides the covered band-stand, where sweet music is discoursed in summer, there are a number of "Kiosques,"* useful and ornamental, refreshment rooms, &c. In one of these there is a very interesting relief of

MONT BLANC

in wood, twenty-six feet long. This monarch of mountains is not visible from the garden, but from the opposite side of the lake, of a clear evening, about the set of sun, Mont Blanc is seen to advantage, though 60 miles off. Indeed, it is the grandest "sight" in Geneva. From the garden, however, you have a fine view of the long Jura range—at this time of the year covered with snow—also of the lovely lake, which stretches away to the north-east upwards of fifty miles. The bay immediately in front of the garden is protected by substantial stone breakwaters, and presents a very lively appearance with steamers, lateen-rigged schooners, yachts and row-boats in great variety flitting about. Along with this I am sending you rude sketches of

THREE TREES

in the garden, which at tracted my attention especially. No. 1 is a very fine specimen of the *Wellingtonia gigantica*—the best I have ever seen. It is in perfect health, and he foliage, even at this inclement season, is luxuriant. Not trusting my unaided eye, I had the gardener to help me measure it. It stands fifty feet in its

* Pavilions.

stockings, and its lower branches cover an area of seventy-eight feet in circumference. By actual measurement, its girth at the base of the trunk is thirteen feet four inches. My informant assured me it was planted here, by himself, in 1862, when it was a sapling of three feet. Its growth must have been not far short of two feet per annum. No. 2, the *Cedar of Lebanon*, is much younger. Its height may be about twenty-five feet. It has evidently outgrown itself in this rich nursery of made ground, and seems to have difficulty in preserving the centre of gravity. It has a profusion of light green foliage hanging in long tresses down to the very ground. Having an eye to the practical, I judge that No. 1 would certainly make the best stick of timber; but No. 2 commands our respect and admiration as the lineal descendant and representative of a very old and aristocratic family. As for No. 3, he—or she, perhaps—is quite a stranger to me; though doubtless you who are supposed to be well up in the business would recognize it at a glance. It is a flowering tree, about twenty-five feet high; an evergreen leaf, not unlike the walnut, but hard and glistening. Descending from the upper branches are chunkey cones like small pine-apples; these, the gardener tells me, are the flower germs which, when they open in spring, cover the tree with blossoms "*tres magnifiques*,,' and fill the air with sweet perfume. It is a very handsome to look at even now. The Spruce family are well represented, single and double; also larch of various kinds, in fine feather. You can meditate *sub tegmine fagi* red and green. Birch, pine, lime and plane tree have also a place in the garden. The last named is of a kind very common on the continent, which has the habit of casting its bark frequently, giving the trunk and branches a very singular mottled appearance. It grows very rapidly, and is said to stand the London fog and smoke better than any other of the park trees. Here they prune it severely, by which it assumes the shape of an umbrella, affording excellent shade, without unduly obstructing the view. We have avenues of them here, miles long, which must be beautiful in the hot summer weather. The linden, or lime, is also a great favorite all through the Continent. The principal street in Berlin is the "*Unter den Linden*"—the promenade under the limes. We had three notable trees of this kind at Lucerne called the "*Drei Linden*," upon the summit of one of the lively green hills from which there is one of the finest views of Alpine scenery imaginable. Among the shrubs in the Jardin Anglais are the Arbor Vitæ of different kinds. The holly, plain and variegated, covered just now with crimson berries of sombre hue; the Portugal Laurel, Bay and Box; and the Laurier Thun, a beautiful dark-leaved bush resembling Pyrus japonica, which flowers all winter, and is now at its best. There is not a rhododendron in the garden, though it is a native of this country, and abounds in the mountains in a wild state. The aracaria, so common nowadays in Scotland, is not to be found here. Doubtless they have beautiful roses and dahlias, fuschias and heather in their season, for these seem to be favorites all over Switzerland, as are also Chrysanthemums, in many colors, Gladioli, China Asters and Carnations, with many others that I cannot name.

LAWNS.

In lawns that have been raised from grass seed sown the past spring, many weeds will appear. The perennial ones should be weeded by hand. The holes made by removal of roots can have a little earth put in. The creeping

grasses will soon cover the surface. Lawns that have been cut very close for several years, will suffer much from creeping weeds, which get all the sunlight on their foliage they require to keep them healthy. Unfortunately there is no way to get rid of these but by letting the grass grow for a season, which smothers out the weeds. A good help, however, is to sow in the fall, seeds of some low growing tufty grass, which mowing does not weaken much. The Sheep Fescue is a good one for this purpose. We are inclined to think that even for the main grass in lawn making it has some good points. So far the Kentucky blue grass has had no competitor. The good point in a first-class lawn grass is that it shall grow so stocky as to crowd out all competitors.—*The Gardener's Monthly.*

WEEDS.

J. HOYES PANTON, M.A., F.G.S., PROFESSOR OF NATURAL HISTORY AND GEOLOGY.

ANY plant out of place is really a weed, even if it does possess considerable beauty. Some plants are so frequently out of place that they have been always known as weeds, such as the thistle, chickweed, bindweed, etc.

In Ontario we have somewhere 150 species of plants commonly known as weeds, and of these nearly 100 have been introduced from Europe. Every year adds a few more foreigners, and if farmers are not more vigilant in watching against these unpleasant invaders our Province will soon be overrun.

There is no doubt that weeds are on the increase in Ontario, both in number and species. This may be accounted for by the comparative indifference of many farmers to the growth of weeds on the roadside, as well as to the practice which now prevails of procuring a change of seed from other districts. The productive power of these pernicious plants will be better understood when the reader examines the results of observations on their seed-bearing capabilities.

In each case following the seeds are from a single plant: purslane, 500,000; burdock, 400,328: cockle, 3,200; mustard, 31,000; Canadian thistle, 42,000; ox-eye daisy, 9,600; chess, 3,500; mallow 16,500. When we consider this productive power and the vitality some possess, together with the peculiar mode by which many are distributed, the surprise is that we are not more overrun than we are, especially when unfortunately located near careless or indifferent farmers.

Weeds are largely distributed by the following means:—

1. Along with grain obtained from other districts.
2. Animals carrying seeds attached to their bodies.
3. By the wind, where seeds are supplied with structures which enable them to be blown about.
4. Threshing machines carrying seeds from farm to farm.
5. Renting farm for a short time to men who are indifferent to the condition in which they leave the place, better or worse, and usually worse than they found it.
6. Manure from city stables.

With such odds against him a farmer who desires to keep his fields clean must be vigilant, industrious and painstaking. However, if he observes the following hints he will succeed in destroying weeds:—

1. Cultivate the land thoroughly.
2. Watch the roadsides and fence-corners.
3. Never allow the weeds to seed.
4. If possible, never allow weeds to have the benefit of sunlight; this can be effected by constant and thorough cultivation, and will soon result in a clean farm.
5. Secure the co-operation of fellow-farmers.

A knowledge of the nature of weeds becomes of importance in destroying them. Annuals live but a year, bear many seeds, and when young are weak and tender, such as shepherd's purse, mustard, cockle, pennycress, wild oats, chess, ragweed, chickweed, sow thistle.

Biennials continue two years and usually have a tap-root. Unless these plants are cut below the surface, cutting increases their vigour. Wild carrot, blueweed, burdock and mullein are perennials.

Simple perennials continue from year and will reappear til the root is utterly destroyed, of which are the ox-eye daisy, mallow, chicory, bind-weed, sorrel and campion.

Creeping perennials are more or less jointed in the roots, each joint capable of growing if separated. Continued cultivation and smothering from light are necessary to kill these, among which are Canadian thistle, couch grass, toadflax, milkweed and sow thistle (perennial).—*Bulletin X, Agricultural College, Guelph.*

Fruits.

FRUIT PACKAGES.

It is stated that thirty-five of the fruit growers of Berrien Co., Michigan, have signed an agreement to use the full quart box for all fruits, except red raspberries, and to pack in twenty-four quart cases. We have also some enquiries from Canadian growers, who seem to favor its adoption here.

We question whether it would pay to make the change, now that a basket holding less than a quart has been so long in use in Canada. It is thorougly understood among buyers and consumers that the basket does not hold a quart, and probably a larger size would not sell at a proportionate advance in price.

What we do want is a

STANDARD SIZE,

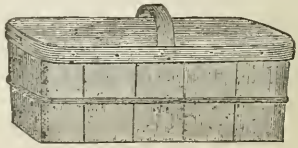
and an agreement among fruit growers upon this should be made as soon as possible, looking to our legislature for confirmation of the same; for as things are now there is a constant temptation to cheat the buyer, by using a basket a shade smaller than the customary one, so that the difference may escape his notice and bring the same price. This trick is allied to that of concealing all the small, mean berries in the middle of the basket and topping out with the biggest ones. It may succeed for a few shipments, but as soon the name of such a shipper becomes known in the market, his packages are viewed with suspicion.

For raspberries and blackcaps the same package is suitable which has been advised for the strawberry, but with closer corners. The pint size is recommended for them by some, but we have never received any advantages from their use. The expense is greater, and buyers at wholesale are seldom willing to pay more for a crate of berries, containing 48 half baskets, than for the same crate containing 24 of the usual size.

The most generally

USEFUL BASKET

we have in Canada is the twelve-quart peach basket. It costs so little, and is



12-QT. PEACH BASKET.

so convenient to handle, that it is being adopted for carrying almost every kind of fruit that is at all firm in texture. How beautiful is one of these baskets filled with Early Crawford peaches, and neatly covered with car-

dinal leno! No wonder the dealers write, "They sell like hot cakes."

This basket, the cut of which has been kindly loaned us by Mr. W. B. Chisholm, of Oakville, is now largely used for cherries, currants, gooseberries, apples, pears, and plums, as well as for peaches. Of course, if cherries are very soft, they had better be turned out into strawberry baskets and so packed; but if firm, they will be most marketable in the twelve-quart basket.

The condition of cherries depend very much upon the picker. The first impulse with many pickers is to grab the fruit itself by handfuls, with the idea that it would take too long to handle them by the stems. But really it does not take any longer for a skilful hand. A trained picker, with a good ladder, basket and hook, will gather from 60 to 100 quarts a day, and never handle the cherries except by the stems. Thus gathered they will present a clean, fresh appearance, when placed upon the market.

The tidiest way of addressing these baskets is with a slip of paper, on which is printed boldly the name of the consignor, and of the consignee, placed under the leno covering; but where they go to many different consignees, a tag tied on the handle is the simplest method.

For pears, apples, and tomatoes, a handy box is manufactured by A. C.

BUSHEL BOX FOR APPLES, PEARS, TOMATOES, ETC.

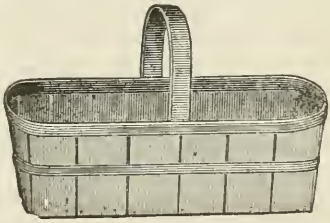
Rice & Co., Sarnia, in either one-third, one-half- or one bushel size, which is very servicable, especially for choice fruit which is going to distant markets. Tomatoes come up in this kind of a box from Illinois into Toronto market, and some seem to think that very choice apples for foreign shipments might be put up in it.

For

MARKETING GRAPES

various shapes and sizes of baskets and boxes have been made, each claiming the precedency, but now that this fruit is grown so extensively and the market price is so low, it scarcely pays to pack them in small baskets or boxes. For very choice assorted lots for table use, it does perhaps pay the grower to use the ten pound grape basket, but for the bulk of the crop nothing can supercede the the sixteen-quart grape basket, which

10-LB. GRAPE BASKET.



16-QT. GRAPE BASKET.

holds about twenty pounds of grapes. Covered with blue leno, it shows off the fruit to the very best advantage.

All these baskets are sold with the fruit, and are seldom returned to the shipper. We notice that the Delaware and Maryland peach growers still use an expensive basket, and are insisting upon their return. They have even resolved in convention to ship only to such commission merchants as will agree either to return the baskets, or to forfeit five cents for each one tha is missing. All this brings endless trouble on the wholesaler and retailer.

We believe our cus'om in Canada of using cheap baskets, which may be sold with the fruit, to be the one most likely to facilitate trade, and the wide distributions of our fruits into numerous and distant markets.

The question of

FRUIT TRANSPORTATION

will occupy the attention of Canadian fruit growers in the near future. We are pleased to learn that the express companies are preparing new and more convenient shelved cars for the more careful carriage of our tender fruits, and so long as they are able to carry our fruit at a low rate, and handle it with care, all right; but the trouble is that their time for handling it at many points is limited, and the fruit products of our country are so rapidly increasing in quantity, that the agents are overcrowded with work and handle our fruits in a very rough mann r, by no means commensurate with the high rate of their charges. It is a question whether it would not be wise to petition the railway companies and provide special fruit cars for the height of the fruit season, which could be left at different points along the line for filling, and be gathered up by some special evening freight train, and delivered in the cities to which they are consigned in time for early morning markets at freight rates.

We highly appreciate the great service rendered us by the express companies for ordinary occasions, but extraordinary occasions require also some extraordinary provisions.

FRUITS ON COMMISSION.

With the amateur fruit grower and gardener the question of how to dispose of his fruit is not very important. He grows just what he can use or sell in a near town or village. But when one enters upon the business of fruit growing on a large scale, as many are doing, the question of how to sell the crop quickly, safely, and with profit, becomes most important.

No doubt it is well, as far as possible, to be one's own salesman, and make contracts in advance in various towns with reliable men, but many of us find that our time is too much taken up with gathering and shipping to leave us any time for making sales and collecting payments. We must then engage others to do this work for us.

Out of this necessity have arisen many commission houses, notably in Toronto and Montreal, and as several of them are beginning to advertise in our columns, we take this opportunity of referring to them and their work. As very little capital is necessary to the commission agent, many take it up who are not responsible, and frequently the over-confident shipper finds himself minus both fruit and money. We shall endeavour to guard against such in our advertisement columns. The best houses now make returns each week, or every fortnight at the longest.

The usual commission charged for making sales and collecting the money is 10 per cent. on small fruits, and 5 per cent on larger fruits when shipped by the car load. When the agent secures us good prices we do not grudge the 10 per cent on small lots, but when prices are low the commission and express charges seem to swallow up our already too small margin of profit.

The Delaware peach growers have formed a very sensible organization from which possibly Canadian fruit growers might take a hint. It is a fruit growers'

BUREAU OF INFORMATION

and distribution, for the disposal of peaches and other fruits, for the purpose of avoiding gluts in particular markets. The following, according to

the *Weekly Press* (Phil.), is the mode of operation :—

"An Executive Committee was selected and authorized to appoint a chief distributor, who may be an officer of the Pennsylvania Railroad, stationed at Clayton, Del., or other headquarters of the Delaware Division. The duties of this officer, as scheduled, is to oversee the loading of cars all along the Delaware Division so that 300 baskets are packed in each car, to notify shippers all along the line when the quota of each city is filled, and then immediately stop shipments to that market.

The chairmen of the different produce exchanges and a selected number of commission houses in each city are to be the guagers, and are to guarantee early in each day the sale of a certain number of carloads of fruit. Growers are to be admitted to the privilege of this bureau by paying a certain scheduling fee, according to the number of trees they own.

"Owners of 3,000 trees are to pay annually $5, 5,000 trees $8, and all over that number of trees $10. Growers and buyers alike say that the bureau, properly managed, will prevent the dreaded glut."

Some such organization would be of great service to us in Canada, even when we make a business of shipping on commission.

PACKING AND SHIPPING FRUIT.

SIR,—Regarding the packing and shipping of fruit we will cheerfully furnish any information in our power, that will in any way benefit or instruct the fruit growers, as to the best and most profitable method of marketing their fruit. In the first place we will take strawberries, raspberries, etc. We would strongly recommend the use of the

24-QUART BASKET CRATE

in marketing these fruits. This package is well liked by the trade, as it is much more convenient to handle than the large wooden crates, and is also greatly in demand for the requirements of the retailer, who, as a rule, prefers it to any other package. The best made basket crate, we have yet seen, has a wooden partition across the centre, and the ends are also of wood. This makes a much stronger and better crate than the one previously in use, and is better adapted for shipping and reshipping, and we believe it does not cost any more money. As this crate is not returnable it does away with all the trouble of returning empties, which everyone will admit has been a source of great annoyance in past seasons ; to the commission men on account of the difficulty in collecting them in, and getting them returned from outside points ; and to the grower on account of the trouble experienced with the express company in having them returned to them promptly and correctly. We believe this crate is made in Thorold, but we do not know by whom. In

PACKING

the fruit pick the berries nice and clean, and fill the baskets well—we would request you to pay particular attention to the filling of the baskets, as this is about the most important point to be considered in the shipping of berries. Fruit frequently reaches market and, when opened up for sale, the baskets show up very slackly filled. This is owing to their settling down while on the train, and can be avoided by shaking them well down when filling the baskets. We often receive packages of mixed fruit—for instance —so many boxes red currants, so many boxes black currants, and perhaps two or three other kinds of fruit. We do not know the grower's object in putting their fruit up in this way, but we are satisfied that it is of no benefit to them,

inasmuch as a package containing one straight kind of fruit will, nine times out of ten, sell quicker, and to better advantage, than if it contained two or three different kinds.

Gooseberries, cherries, red and black currants, plums, peaches, etc., should always be shipped in 12-quart baskets. Fill the baskets well and shake them down to prevent settling after, and make the fruit a fair sample throughout. We hear of numerous

COMPLAINTS

every season from buyers, stating that fruit that they bought was nicely topped up with fine fruit on top and nothing but trash underneath; and they frequently refuse to pay for it on that account, and thus the commission men have to stand the brunt. A grower in doing this may receive benefit in a few instances, but in the long run it will operate against him, because buyers are now getting too keen to be bitten twice on the same brand of fruit, so that we would strongly urge all growers in marketing their fruit to make it a good fair sample throughout, which would decidedly be in the best interests of all concerned. Cover your baskets nicely with cardinal or blue leno. Use whichever color is best adapted to make the fruit you are shipping look attractive; and always keep a supply of both kinds on hand. Early apples and pears may be shipped in baskets when first coming in, but as soon as they commence to move freely, we think it would be best to pack in barrels and ship by freight, and save the expense of baskets, and covering, and express charges.

Always write your full name and post office address plainly and distinctly on every shipping tag or label, and then see that they are securely fastened to each package, so as to avoid loss and confusion when they reach markets. We believe a great many growers think that

HOLIDAYS

are good days to ship on. This is a mistake, and whenever possible avoid shipping on such days; also on late trains, as fruit thus shipped, as a rule, has to be cleared out to pedlers or held over until the following day, when it never looks as nice and will not sell to as good advantage as if fresh received.

We omitted to state above that grapes should be in 16-quart baskets. Fill baskets well and mark the weight plainly on the handles. Yours respectfully,

McWilliams & Everist.

"DROPPING" OF THE WEALTHY APPLE.

T. H. HOSKINS, M. D.

In the March number of the *Canadian Horticulturist* a correspondent asks if the Wealthy Apple has the defect of dropping off the tree before it is ripe, and it is easily shaken off by winds? To these questions Mr. A. A. Wright, of Renfrew, Ont., replies that he has never been troubled with the Wealthy dropping its fruit prematurely, as the Tetofsky does; neither is it easily shaken off by the wind. Mr. Wright adds: "We find it, so far, one of the very best apples we have for our cold, northern climate;" and he says that he sent several boxes of the Wealthy to the Intercolonial Exposition in London. Notwithstanding this entirely correct statement of Mr. Wright, I have had quite a number of complaints in regard to the Wealthy dropping its fruit, and always from the same parties a complaint that it is a poor keeper. As both of these accusations run counter to my own experience, and as my Wealthy orchard is, I feel sure, the oldest and largest of that variety in New England, I desire to give the result of a careful investigation of the matter.

The Wealthy, in northeastern Vermont, is fully colored, in skin and seed, usually by or before the 20th September. Up to the 1st October it is one of the very best apples to hang on in a high wind that I have ever seen. It never drops its fruit for the reason which causes the Tetofsky to fall, which is that the latter grows in close clusters and has a very short stem, so that, as the fruit enlarges, the growth causes them to crowd one another off. The Wealthy, although a more productive tree than Tetofsky, has its fruit distributed along the branches instead of being clustered on spurs, and its long and strongly attached stem (both to fruit and limb), holds very firmly until the fruit begins to be over-ripe. If gathering is delayed until this period has arrived, the apples begin to lose their firm adhesion to the tree and to fall to the ground—the wormy ones first, but soon also those which are perfect.

Experienced orchardists never allow apples to become over-ripe before harvesting. Early fruit, so left, will not endure transportation, while winter apples will be much impaired in their keeping qualities. But a large number of ordinary farmers and amateur growers are ignorant of this fact, and it is for their benefit that I make this statement. As regards any apple which it is desirable to keep into the winter, it should be gathered as soon as it is fairly colored up and the seeds are brown—two signs which in most cases come nearly together. North of 45° in New England and Canada, if gathered promptly at this period, carefully handled and stored at once in a cool, properly ventilated fruit cellar, it is a true winter apple, keeping well until the first of March or later. I still have them to-day (March 23) in full flavor and firmness of flesh, although we had an unusually long and warm autumn. If, however, I had let this fruit remain upon the trees until it had begun to drop badly from over-ripeness and had then left it exposed to the alternations of temperature, unavoidable in above-ground storage until hard freezing weather, as is often the custom, it would have been necessary to market the whole crop before Christmas. But stored in a deep cellar with the windows all open every day, cool night, and closed at all other times, they have kept with hardly any loss as above stated.—*Rural New Yorker.*

THE BAGGING OF GRAPES.

That the process of enveloping growing clusters of grapes with proper bags for protection against insects, mildew, rot, etc., is one of value, has been proven to the satisfaction of many cultivators. Comparatively a new idea, the season of 1887 will see it applied far and wide, more extensively than ever before. It is one of those simple processes that every amateur, even though he have but a single vine, may readily adopt with advantage. One grower who experimented in bagging his grapes last year, reports that in his case it made just the difference between success and failure.

The course is a most simple one. Common light manilla bags, the size known as two pound bags, are usually employed. These are slipped on over each cluster of the fruit, and secured somewhat loosely by pins or stitches of thread. If the stem of the cluster is brought against one end of the opening a single pin to a bag will answer, if in the middle, to have the paper bear evenly on all sides, then several pins or stitches are needed. A small slit should also be made in the bottom of each bag, to allow escape for any water that may enter into it along the stem. From 500 to 1,000 bags can be put on

in a day by one person, and costing from ½ to 1 cent per pound of fruit.

The advantages of bagging grapes may be summed up as follows: Freedom from the attacks of beetles, grasshoppers, fowls, birds, etc.; prevention of mildew and rot; protection against frosts; improved appearance and development, the bloom more perfect, the berries larger and uniformly fine, and the general appearance more attractive. While the color of red and white grapes may be somewhat lighter for the bagging, black grapes are said to be fully as black and covered with a heavy bloom. There is said to be no material difference in the ripening of bagged or unbagged clusters.

The time to bag the fruit is early in the summer, as soon in fact as it is well set. If it be done before the berries are as large as peas, they will be saved the depredations from the little beetles which some years begin very early their attacks on the fruit.

For family use especially, the satisfaction of having the fruit turn out so much better in general should lead to this course being adopted by all who have vines. There will be ample compensation for the small trouble and expense involved. To what extent bagging will come into use with market growers remains to be seen; perhaps in the more favorable localities for the grape it would be looked upon as a needless outlay, but without question in many others the improvement in the fruit would easily outweigh the cost and trouble of the bagging.—*Ex.*

Hardiness of the Champion.—Rev. Francis Coleman, of Hamilton, says his Champion grape vine, the fruit of which he values for the manufacture of home made wine, has not proved as hardy with him as some other kinds. It had grown up twenty-five feet over a large trellis, and this spring he finds it killed back to within five or six feet of the ground.

A NEW HAND CULTIVATOR.

We are always glad to notice any new Canadian invention, especially when it is designed for the use of the gardener. or the fruit grower. And now when many of our readers are very busily engaged in keeping down the weeds in their patches of onions, carrots &c., in their garden, we give place for a cut of a new combined weeder and cultivator invented by Mr. S. H. Mitchell, of St. Mary's, Ont.

The inventor describes his instrument thus:—

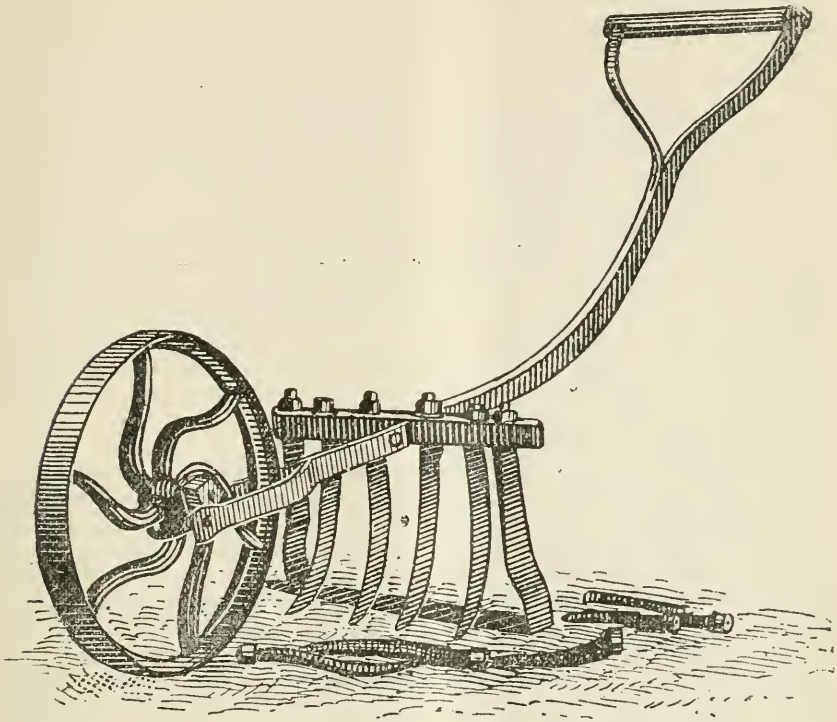
"It has double-edged knife with sides bent inward so as to let the knife pass close to large plants without injuring leaves or stems.

"The double-edged knife will cut backwards as well as forward, so that by successive strokes backward and forward the soil can be moved two or three inches deep if required; or should there be any obstruction in the ground, causing the knife to jump out, the operator can in a moment draw a stroke backward, and cut every weed clean.

"It has cultivator teeth that can be set to cultivate between two rows that are from eight to fifteen inches apart, and by running twice between rows two feet can be cultivated. They are designed for deep cultivation, where soil has become hard or crusted. The teeth are curved, and have sharp chisel points that cut everything that they pass, the shanks being brought to a knife edge, so that while all the soil is moved, none of it is thrown on the plants or misplaced.

"Teeth can be used with or without knife, or knife and part of teeth can be used, as seen in cut.

"Knife and teeth are all solid steel,



MITCHELL'S HAND-CULTIVATOR.

and frame wrought iron, being both cheap, light and durable.

"The wheel can be adjusted for deep or shallow cultivation.

"The knife or weeder runniug square across between the rows, it never jumps either to the right or left, so there is no danger of cutting up plants although the knife is passing close by them.

"The knife can be adjusted so as to cut all weeds perfectly clean, and yet very shallow, clipping the weeds just below the surface, leaving the weeds on surface without any roots, thus preventing the possibility of their growing again.

"This hand cultivator has been invented by me after having over twenty years' extensive experience in the market gardening, and after trying many kinds made both in Canada and the United States."

Not having as yet given this Cultivator a trial, we cannot give any opinion as to its merits and compared with other hand cultivators. It certainly gives us a favorable impression

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INSECTICIDES.

PYRETHRUM, also known as Persian insect powder or Dalmatian insect powder, is a Persian plant. Within the past few years, however, a large amount of it has been grown in California where it flourishes well. The powder is made by drying and pulverizing the flowers. Californians have

adopted the name of Bubach for this product.

This powder is very peculiar in its action. It is not poisonous to vertebrate animals and may be even eaten with impunity, but a little of the dust blown upon an insect of almost any kind is sure and speedy death. This fact of being non-poisonous to man renders its free use possible in the house or on any plant or vegetable out of doors.

In using it as an insecticide the general mode of application is by a small bellows. So deadly is it that thus thrown into the air of a closed room filled with flies a half hour or so will find about every fly dead. The operator can force the powder through the air in a minute or two, step out into the pure air, closing the door, and in a short time return to find the room well rid of the pests. The only trouble thus using it in the house is that the dust will settle upon everything in the room. If it be placed on papers or plates and placed about the room the flies will get at it the same as other preparations for the purpose and be destroyed, but this is rather a slow process.

Pyrethrum will destroy bees, wasps, ants, most of the beetles and some of the true bugs (hemiptera) plant lice, mosquitoes, etc., but some of the bugs and beetles withstand its influence.

Pyrethrum may also be used with water. Prof. Cook finds that a tablespoonful in two gallons of water will destroy insects when sprayed on plants infested by them. He also recommends it for use on horses in fly time. For this purpose put a small spoonful into a bottle of warm water and take it to the field with the team, or in the wagon, if driving, and once in two or three hours apply it by a sponge on the legs, under the lower jaw, about the loin and sides or wherever the flies are troublesome. We have tried it on potato bugs, striped cucumber bugs, etc., but without any very good results. Paris green is certainly preferable for potato bugs. But taken all in all we are satisfied that pyrethrum is the safest and most useful insecticide that we have for general insect destruction. For the spraying of large trees to get rid of web worms, etc., however, London purple or some other of the arsenical preparations are most useful. Soft soap, a pint to the pailful of soft water, will also kill aphis on fruit trees, cherry and pear slugs, etc. Shower it with a force pump and hose.—*The Farmer.*

Striped Beetle on Cucumbers, Squashes and Melons (*Diabrotica vittata*).—This is a well-known, small, destructive insect which makes its appearance as as soon as the leaves begin to expand, and a number of broods are produced during the course of the season. It is to the young plants that the insect is most injurious, and the great secret in dealing with it is to begin the treatment positively in advance of the insect's appearance.

Remedy.—To two quarts of plaster, wood ashes, or flour of bone, add one tablespoonful of kerosene, rubbing the mixture between the hand until the oil is well distributed. Sift or hand sprinkle this over the plants as soon as the first leaves appear, repeating it a few times until all are through the ground, and also later if this be required.

Black Squash Bug (*Anasa tristis* De Geer).—About the last of June, throughout the north, these troublesome bugs appear on squash-vines, and lay their patches of eggs, which soon develop into troublesome broods. A most striking characteristic of the insect is its offensive odor when handled or crushed. As the eggs are not all

laid at the one time, the young appear in successive broods.

Remedies.—(1) Use plaster and kerosene same as above. (2) Trap by laying shingles about the hills, the bugs, after feeding in the night, may be found collected on the under side of such. Proceeding to the patch early in the morning with a pail containing some kerosene, the shingle should be gently raised and the insects jarred or brushed into the kerosene, returning the shingles again for successive catches later.—*Popular Gardening.*

FERTILIZERS.

Use of Gypsum.—Gypsum should never be used on wet land, especially when it contains stagnant water. Its tendency is to make such land wetter and colder than before. Phosphate treated with sulphuric acid is warmth giving. It helps to decompose the soil with which it comes in contact, and thus increases the supply of plant food even beyond what itself furnishes. Gypsum also does the same, though in a different way. It is quite likely that the tendency of gypsum to absorb moisture from the air in the form of a dew takes considerable ammonia from the air, and that some of this is retained by the soil for plant food. In many kinds of farm work, especially plowing and cultivating, there is great advantage from getting out early and working while the dew is on the grass or soil. As soon as it is covered it is safe from loss, but if left till midday most of the dew will be dried off, and whatever ammonia it contains will be restored to the air. There is this sound reason for the old saying that the best time to hoe cabbages is very early in the morning, while the dew is on them and on the loosened soil. Frequent applications of gypsum to increase the dewfall will add to the benefit.—*New York Herald.*

Barn manure contains six pounds of phosphoric acid to the ton; ten pounds of potash and eleven pounds of nitrogen. A ton of hen house manure will contain forty-eight pounds of phosphoric acid, forty one pounds of potash and sixty-seven pounds of nitrogen.

Nitrate of soda is found in large deposits in Peru, Chili, and a few other warm countries. It is mined and shipped to this country and England in large quantities. When crystalized it contains 14 to 16 per cent. of nitrogen. It comes more or less mixed with common salt (chloride of sodium) like the German potash salts. It acts quicker than any other nitrogenous manure. and is specially valuable on clay lands. The value of any of these commercial fertilizers to the farmer must be determined by himself by actual experiment. On some soils, potash manures are greatly needed, and are therefore valuable; on others, though apparently needed, they make no return, while perhaps nitrogenous manures might be specially useful on these. In trying anything of the sort, get it in small quantity at first, always of a reliable dealer, and you can soon tell whether it will be profitable to you to use it.—*Ohio Farmer.*

Open Letters.

The Cherry.—Sir: I received the Russian cherry O. K. I waited to see it in leaf before sending receipt of same. It is doing well, and many thanks to the Association for the present. Wishing you every success,

I remain, yours truly,

P. B. C.

Midnapore, N. W. T.

Water-Lily.—Sir: A lily quite as large a *N. tuberosa*, but of a *rich cream colour*, is offered for sale in great abundance at the various stations on the

Yarmouth and Digby Railway, Nova Scotia.

T, H. RAND, Woodstock College.

PINK WATER LILY.—SIR: In the June number of the *Horticulturist* there is a request to those who know where the Pink Water Lily may be found in Canada. We can boast of this beauty here, and, on reference to Mrs. Traill's charming work, "Studies in Plant Life of Canada," find its habitat is at Lakefield. Perhaps I may be pardoned a quotation from the above work when describing it. "It is of such an exquisite color that it can only be compared with the

"Hues of the rich unfolding morn
That ere the glorious sun be born,
By some soft touch invisible,
Around his path are taught to swell."
—*Keble.*

This is called Nymphea odorata var. rosea and is found abundantly in many of the small lakes in the northern counties of Ontario, particularly in the Muskoka District. AN AMATEUR.

London, Ont.

A STRAWBERRY WEEVIL.

The Editor Canadian Horticulturist.

Sir: I enclose a number of little beetles, or weevils, that are destroying my strawberry blossoms.

I take several horticultural journals, &c., but have never seen anything about such an insect. I see slight traces of them in all the strawberry patches in this neighbourhood, but not to amount to anything.

They have destroyed fully two-thirds of my crop. They shew a particular liking for the Sharpless; in fact, the Chas. Downing are comparatively uninjured. In some instances, every fruit stalk is stripped, and not more than six berries on an average are left on a stem.

They always destroy them before blooming: any bud that manages to open is out of danger. They cut them off from one-eighth to one-sixteenth of an inch from the bud. I have tried Hellebore and Pyrethrum powder, putting both on very thickly in a dry state, but they do not seem to notice it; in fact I have found them snugly nested among the stems entirely covered with the dust, and apparently not affected by it. If I can find no remedy, I must give up trying to grow strawberries. It is certainly a local pest at present, but it may spread if nothing is found to check it. I will further add that I have found occasionally a wild strawberry plant attacked by it, but very seldom. I shall be greatly obliged if you can do anything to help me in this matter, and if you can find out what the enclosed beetles are; also if any remedy is known for destroying them. Very truly yours,

LANDON HALL,

Cowansville, Prov. Que., June 6, 1887.

[The insect evidently belongs to the Curculionidæ, but is quite a new species to us. We have sent samples to an eminent entomologist and will give his reply as soon as received.—ED.]

FRUIT PROSPECTS.

The Editor Canadian Horticultural.

SIR: THE PROSPECTS for a crop of fruit in this country at the present time is first-class, especially of small fruits and peaches. Cherries will be about half a crop. All other fruits promise fair at present. The curl seems to have mostly left the peach leaves, but the leaves seem to be dropping badly. Perhaps some one could give a reason. The Marlborough raspberries I got last year seem to grow well this year, and I am expecting good results from them.

Forest, Ont. J. M. REMINGTON.

Pinch off the canes of your grapevines, leaving three or four leaves beyond the last cluster. The plant will not expend its energies in running out a long cane to be cut back next winter, but will make large fruit and strong buds for next year's growth.

Uses of Fruits.

Next in importance to the best modes of cultivation and the selection of the choicest varieties, comes the most approved methods of preparing fruits for use. We would be glad therefore if the ladies, who read this Journal, would make free use of this column for an interchange of ideas on this subject.

STRAWBERRY SHORT CAKE—A HYGIENIC RECIPE.

BY SUSANNA W. DODDS, M. D.

Singularly enough, some of those dishes that are most highly esteemed as "delightful deserts," judging after the manner of the ordinary palate, are just the ones that have given the best results under hygienic treatment. Among these is strawberry shortcake. Made according to the hygienic recipe given below and properly managed in all the little details, it never fails to give good satisfaction.

Fruits—and especially the small fruits—are such delicate products of the soil that, whether served as such or in combination with some cereal product, they require exceedingly careful management at every stage, else a part of their exquisite flavor is lost. This is too often done by over-sweetening, or (in the cooking) by making injudicious combinations, as with butter, spices, etc.

To the unperverted palate no improvement can be made on the thoroughly ripe raw strawberries. If slightly under-ripe. a trifle of sugar may be tolerated; but do not add thereto either milk or cream. If you do, my word for it, you will in less time than it takes to tell it, have a curdled unsightly mass, fit only for the slop pail.

But was it not the "cake" we were talking about? Well, "our" strawberry cake has no butter in it, neither in the mixing nor after it is baked. "Is it good?" Suppose you try the experiment. One thing, it will not cause a headache, even if you eat two large pieces—provided you have not already dined too sumptuously before it is served. Now for the making of it.

STRAWBERRY SHORTCAKE. — Three cups sifted Graham flour, three cups sifted white flour, two cups sweet cream, one teaspoonful soda, finely pulverized; two teaspoonfuls cream of tartar, four quarts of fine strawberries, or six ordinary.

If the fruit has been properly gathered and not carted in open trays through a dusty thoroughfare, no washing will be needed; when this has to be done much of the juice is necessarily wasted. When the berries are a little firm, a good plan is to sprinkle lightly with ice water and then with sugar, in order to start the juice. Do this at least an hour before they are wanted; and unless very ripe and soft, it is best to chop them with a knife—a silver one if you have it.

Mix the cake as for "cream biscuits," sifting the soda and cream of tartar several times through the flour. Roll to the thickness of half an inch, prick well with a fork and bake in a moderate oven from thirty to forty minutes; it must be nicely browned, top and bottom. When done, remove from the oven and lean edgewise to cool till you can handle comfortably. Split carefully in halves by first dividing the crust (at its edge) with a knife, and then taking a fork and separating the cake as nearly through the middle as possible. Lay these each on a plate, crust downward, and put on the prepared fruit; then lay one half upon the other, the crusts still downward, and after half an hour serve.

The above quantity of flour will make three cakes the size of a tea-plate. It is best in spreading the fruit not to drench the cake with it, but to leave out a bowlful of berries and pass as you serve; no other sauce is needed. Should you have the ordinary Graham flour

made from red wheat, take less of it by half a cup, and so much more of the white flour. If baking powder is used it will require three teaspoonfuls heaping.—*Philadelphia Weekly Press.*

CIDER IN VARIETY.

SIR: I send you an article from *Vick's Monthly* which you might reprint in the *Horticulturist*, if you think it of sufficient interest to your readers. *Query.*—Is it possible to make non-alcoholic cider either from grapes or any other kind of fruit?

"Every fruit known will make cider. That from pears is of ancient renown as perry, but pear juice is worth more for syrup or fruit honey, as it is rich in sugar. Plum cider is very nice, and grape cider will yet be the American beverage, having the strengthening quality of wine without its alcoholic spirit, and tasting better than anything known in the shape of drinks. There would not be a grape too many in the United States if the juice, freshly drawn from the clusters, undiluted, could be put on sale in our cities. Its delicious, pure refreshment justifies all that poets have sung and writers have raved about the blood of the grape, while for benefit to feeble, consumptive or bilious people its effects outdo hypophosphites or a trip to Italy, or Saratoga waters. In the Erie wine regions and other vineyard belts, when the grapes ripen, sallow, liver-congested people from cities take board where they can drink the 'must' of new wine as it comes from the press, and return built up for the winter's dissipation. Consumptives, especially, can not do better than to try the grape-cure in this form, and the 'vineyard season' may yet be as fashionable as the sea-side in July."

Yours truly,

GRAPE GROWER.

Niagara Falls South.

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 th 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 knowdge concerning 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.

ERRATA.—In the announcement of our Summer Meeting at Collingwood, p. 142, for 28th and 29th read 29th and 30th.

The Annual Strawberry Meeting of the Columbus Horticultural Society was announced for the 7th of June, at the Horticultural Hall, of the Ohio State University, at 2.30 p.m. A basket dinner was to be served at 5 p.m. The programme included papers on such subjects as the following:—The Strawberry, from a Botanical Standpoint, by Prof. W. R. Lazenby; from an Originators Standpoint, by M. Crawford; from an Entomologist's Standpoint, by W. R. Alwood; from an Editor's Standpoint, by J. J. Janney; from a Chemical Standpoint, by Prof. H. A. Weber; from an Experimentor's Standpoint, by W. J. Green, etc., etc. This is surely a pretty full programme for one afternoon and evening.

It is certainly gratifying to notice in so many instances professors in the departments of science interesting themselves in our horticultural societies. Horticulture is a science, and for its successful development requires the services of the botanist, the entomologist, the chemist, the meteorologist and others. The meetings of our Association, in various parts of Canada, afford a fine opportunity for the professional and the practical man to meet, a sort of field day for both to engage in the stimulating exercise of a mutual interchange of thought, study and experience.

THE BUG THAT CAUSES THE BLACK-KNOT!

"Live and Learn" is an old proverb! and therefore we call the careful attention of our veteran horticulturists, and of our students of science to the following important (!) paragraph which is just now going the rounds of our Canadian papers without question.

"CURE FOR BLACK KNOT.—Hon. Allen Francis, U. S. Consul at St. Thomas, favors the *Times* of that city with a sure cure for black-knot—a remedy he has tried with the most beneficial results His plan is to dig down to the roots of the affected tree four or five inches, bore an auger hole in the trunk, and fill the hole with flour of sulphur. The sulphur finds its way through the tree and effectually kills the bug which is responsible for the black-knot."

Now we have been of late years under the impression that the black-knot is a fungus—a very low form of vegetable life. Dr. Farlow, Prof. of Cryptogamic Botany at Harvard University, has published a full account of this minute plant, showing that small seeds or spores are produced by it, too small to be seen by the naked eye, and that these carry the parasitic growth from tree to tree. Prof. Panton, at Guelph, too, is teaching the boys in the same line concerning the black-knot. But, gentlemen! we are all wrong it appears, for the Hon. Allen Francis tells us that a bug is responsible for the black-knot. He ought to go further and say what bug. Is it anything like a bed bug, or a squash bug; or does he mean a beetle?

Then about the *sure cure*, viz., flour of sulphur, which finds its way through the tree and kills the bug! It is rather a puzzle why he should dig down four or five inches into the roots of a tree in order to bore an auger hole into the trunk. We always supposed the trunk of a tree was above ground, but we are learning something new every day. The auger hole is to be filled with sulphur, but how is it to find its way to the black-knot? Botanists tell us that plants can only take up substance in either a liquid or a gaseous form, and that chiefly through the delicate rootlets. The chemist tells us that sulphur is insoluble in the state above mentioned. How then does it proceed from cell to cell through the plum tree from this auger hole? We wait for further particulars.

A New Strawberry Pest.—Reading in the *Fruit Growers' Journal*, of the preval-

ence in Illinois of a small insect of the thrip family in the strawberry blossoms, we have been looking to see if it was also in Canada. Sure enough such an insect is with us. On pressing the blossoms of some Sharpless and Manchester plants, the tiny creatures ran out and in among the pistils in great abundance. Time will tell us how much injury they are capable of inflicting upon the long-suffering fruit grower.

Secretary Garfield at Cornell.—Chas. W. Garfield, Secretary of Michigan Horticultural Society and of the American Promological Society, has consented to give, some time in May, six lectures to the students in agriculture in Cornell University, on the following topics: 1. Some measurements in the field of horticulture. 2. Methods of tuition and ways of securing the most available information. 3. Problems in promology. 4. Tree Lessons. 5. Commercial methods. 6. Relations of horticulture to an advanced system of agriculture.

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.

Grafting Wax.—*What causes grafting wax to lose its characteristic toughness, and become granular, or like putty and worthless? Is it age, or frost?*
[C. E. B., Yarmouth, N.S.]

Reply from Prof. James, Chemist, Agricultural College.—The grafting wax used here is beeswax, resin and tallow in about equal parts, tallow a little in excess. The use of too much resin in the mixture might produce the result you refer to; or if too little tallow—if oil be added, evaporation, or exposure to heat, might cause granulation. Here the wax is mixed as required. Not knowing the exact mixture used I cannot say more definitely; but I think that *age* rather than *frost* would produce the effect.

Rose-leaf Hopper.—*Please say what is the best cure for white flies on Prairie Roses.* [R., Toronto]

The fly is a species of leaf-hopper known as *Tettigonia rosæ*, and of the same genus as that which is so troublesome to the leaves of the Delaware and other thin-leaved grape vines. You will find an excellent description of it with remedies in the *Canadian Horticulturist* for 1886, p. 170. The remedies there suggested are whale-oil soap and tobacco water. We have tried puffing pyrethrum powder upwards among the leaves with good success. Another effectual way which we have used, is to set fire to a swab moistened with coal oil on the end of a stick, and pass the flame rapidly over the leaves. This is of course at the risk of singeing the leaves, but it thoroughly routs the leaf-hoppers.

Peach Trees.—*Will peach trees ripen their fruit well in a cold grapery here?* [R., Toronto.]

Perhaps some one experienced in indoor peach culture will reply. Mr. P. Barry, of Rochester, has grown the peach in wooden boxes with success. The trees are trained more like bushes than trees, and are moved into a cool dry shed each autumn on the approach of frost, where they are plunged to the rim of the tub or box in the earth. Early in spring abundance of air is admitted, and about the 1st day of May they are placed under glass until about the 15th of June, when they are plunged in an open but sheltered border. By this method Mr. Barry has succeeded in obtaining fruit a little earlier than in the orchard, without

any of the risks from unfavorable changes of the weather.

REPLIES TO PREVIOUS INQUIRIES.

Ants.—The *Popular Gardening* gives the following methods of destroying them: "*Trapping with sponge.* Obtain pieces of large coarse sponge. Dip them in sweetened water and place on old black dishes where the ants abound. When they are black with ants throw them into boiling water, afterwards washing them out and renewing the process till the colony is destroyed.

Poisoning. Place a dish containing a mixture of molasses and Paris green or London purple where the ants have access to it."

Sea-Kale.—I grow it and have lots of it in winter, and I can assure you it is a capital vegetable. I raise it from seed sown in spring, or from pieces of the root, and planted in the same way as horse-radish. In November I dig up the roots and winter them in a cool cellar. And as I want some Kale, fill a box with roots—tops up—and set another box on top to blanch the young growth which are the parts to be used, and bring them into warm quarters anywhere. They are very sensitive to heat, and start into growth quickly.—*Wm. Falconer in P.G.*

Sea-Kale.—SIR: In a recent number of the *Canadian Horticulturist*, I saw an enquiry if sea-kale could be grown in Canada. Yes, it does grow here most luxuriantly, is of easy culture, and quite repays the slight tax on time and patience. The plan adopted to raise plants was as follows: The seeds were sown early in autumn (about September), when the young plants appear in spring put them out into their permanent places, three plants in a hill, the hills not less than three feet each way. When the plants are a year old (from the seed sowing) prepare them for winter in the following manner: cut the large leaves, not too close to the centre, then enrich the surrounding earth with good strawy stable manure (not too close to the stalks), with a liberal portion of salt, sift fine coal ashes or sand over the plants, let them remain undisturbed till spring, when the breaking of the top of the cones of sand or coal, will show the plants are ready to be cut for the table. The kale can be forced by placing barrels over them, the manure outside and the sand inside. When the crop has been used, spread the ashes manure with a liberal supply of salt around the hills, mix well with the surrounding earth, keep free from weeds, this constitutes the summer treatment. By this method you have a most acceptable vegetable which, with asparagus, gives a variety until others are ready.

AN AMATEUR.

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 Dominion Exhibition.—We have received a copy of the Prize List, just issued, for the Dominion Exhibition, which is this year to be held at Toronto in conjunction with the Annual Industrial Fair, from the fifth to the 17th September next. Any of our readers who may desire a copy can obtain one by dropping a post card to Mr. H. J. Hill, the Secretary, Toronto.

Arboriculture and Agriculture, or Forestry and Farming in Ontario, Toronto, 1886.

A pamphlet written by T. B. White, of Clarksburg, Ont. It is the substance of a paper read at the Centre Grey Farmers' Institute at Thornbury, and boldly calls into question the position

so strongly advocated by Mr. R. W. Phipps and others concerning the beneficial effects of forests, in producing rainfall, on the drainage of land, and on the crops of the farmer.

Circular from W. H. Smith, Commission Merchant, 186 King street East, Toronto.

Mr. Smith states he has been in the business since 1874, and is now doing one of the largest Canadian fruit commission businesses in the city. He refers shippers to the Dominion Bank, Toronto.

Circular from McWilliam & Everist, Fruit Commission Merchants, Toronto, 1887.

This firm herein promises daily advice concerning sales, and account sales weekly, with proceeds. This is the only right method, and if it can only be carried out through the season will save much complaint. But when markets are full, and fruit coming in on every side, this engagement is pretty hard to fulfil.

Circular from the Botanical Division of the U.S. Department of Agriculture, No. 3.

This circular, signed by Norman J. Colman, the Commissioner of Agriculture, Washington, is an evidence of the careful experiments being conducted by the U.S. Government in the interests of fruit growers. It is devoted to the treatment of *Downy Mildew* and the *Black Rot* in the grape.

It appears that sulphate of copper has been shewn to be more advantageous than any other remedy, and the only precaution is not to apply it within fifteen days of vintage. The application should be made some time in or about the end of June.

Among the *liquid* remedies advised are; (1) 1 lb. sulphate of copper dissolved in 25 gals. of water; spray the vines with the liquid. (2) 1 lb. sulphate copper dissolved in three or four gals. of warm water; when cold add one pint commercial ammonia; then dilute to 22 gals. when required for use. Apply in the same way. The effect of this preparation, called "Blue Water," is said to be equal to that resulting from the copper mixture of Gironde (see report of F.G.A. 86, p. 23). The price of pure sulphate of copper when bought by the barrel is only about six cents per lb.

No. 2 and also the copper mixture of Gironde is recommended for experiment in destroying the fusicladium (apple scab).

Humorous.

A Dangerous Season.—Why is it dangerous to go out in spring time? Because every flower carries a pistil, the grass has blades, the trees shoot, and the bulrush is out.—*Vox Populi.*

When Gladstone is among the trees on his Hawarden farm, they say he is a first-rate feller.

The Milk Weed.—*City Belle*—(Pointing to a wild plant by the wayside). "What's that?"

Country Cousin — "That's milk weed."

City Belle—"Oh, yes! what you feed the cows on, I suppose?"

India-rubber Plant.—*The Honorable Tom*—"Haw! this is, I suppose —er—the new tobacco that everybody is growing?"

Elfrida de Smyth—"Oh! dear, no. That's an India-rubber plant!"

The Honorable Tom—"India-rubber! how I'd have bet my money it was real. What—er—wonderful imitations there are now-a-days."

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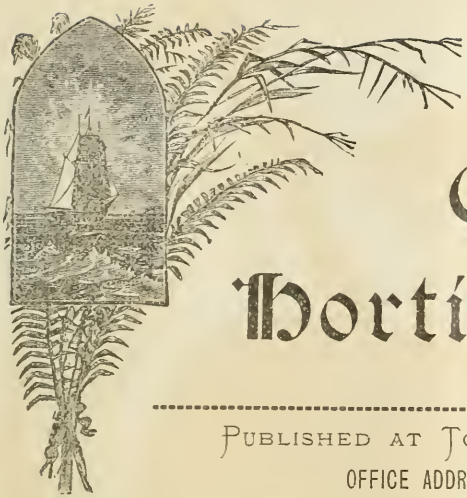
DELAWARE RED WINTER.



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UP WITH THE BREEZE.

"Up with the breeze, the birds and the bees,"
I heard a boy sing in the morn;
And his hoe kept time with the merry rhyme,
As he cheerfully hoed the corn.

Down went the weeds and the noxious seeds,
And up went the emerald corn;
And I looked with delight at the gladsome sight,
The work of the early morn.

The broad green leaves turned to golden sheaves,
And the field of beautiful corn
Was gathered and sold, thus turned into gold—
The work of the early morn.

Then up with the breeze, the birds and the bees,
If you wish to grow wealthy and wise,
And merrily sing like birds in spring,
While your work as merrily flies.

The poor sleepy head, who lingers in bed,
Will have more sorrows than joys;
And when he grows old will be hungry and cold,
So keep "wide-awake," my boys.

—*Unknown Exchange.*

Fruits.

CANADIAN APPLES promise to be unusually fine in quality this year. The dreaded apple spot, which had almost driven us into despair, has suddenly vanished, and every variety, not excepting the Fameuse and the Early Harvest, is thus far perfectly clean. Nor is this merely local. Mr. John Croil, of Aultsville, who was about to cut down or else top-graft his large orchard of Fameuse, says his apples are, so far this season, perfectly clean. Reports from Michigan, where the spot had been equally devastating, show the same encouraging state of things We can well afford to have experimented in vain with hyposulphite of soda, in view of the absence of the disease which needs the remedy.

In quality, the apple crop promises to be light, except in Michigan, New York and Ontario; and in these great apple regions, only a moderate crop is expected. The Baldwin, which is so widely planted, still continues to be barren, or nearly so; and the Roxbury Russet has a light crop; but the Greening, King, Spy, and some other good sorts, are fairly well laden with an extra good quality of fruit.

It seems that our orchards are just recovering from a condition of barrenness and impoverishment to which for several years they have been subject, and which has been accompanied by the destructive effects of insects and diseases to an unprecedented extent. But now, either as the result of better cultivation and the more liberal application of fertilizers, or from other causes beyond the control of the fruit grower, our orchards are showing this year a thrifty growth, and a dark green healthy foliage which gives us the greatest reassurance.

All this combined with the splendid foreign markets opening up for our apples in England, Scotland, Norway and Sweden, and even by the Pacific route to the vast empire of India, cannot fail to remove all fears that apple growing will prove an unprofitable industry in Canada.

The privilege of wisely improving the

GOLDEN OPPORTUNITIES

now opening up, is ours. If we disappoint the expectations of our foreign friends whose opinions of our fruits have been so highly exalted by the display at the Colonial, we shall fall into a worse position than was our previous obscurity.

Our worthy President, Alex. McD. Allan, gave us many excellent hints on packing fruits for foreign shipments at the Collingwood meeting. One important point was the careful grading of our apples, the large size, the small but highly colored, and the uncolored, all to be put up in separate packages; and only one grade to go in each barrel. Indeed every package should prove through and through alike in quality, so that a buyer opening up could scarcely say which end was intended to be opened. For extra choice apples he recommended the use of half-barrels, as being more easily handled, and more salable for high-priced fruit.

It is proposed to have a

CONVENTION OF APPLE GROWERS

at our next annual meeting which will be held at either Hamilton or Grimsby in September next, in order that this question of our foreign markets may be fully ventilated, and thus this important Canadian industry be further promoted. Mr. A. McD. Allan has been solicited to take up this subject more or less in his annual address, by some of our prominent growers, and certainly no man in Canada is so well qualified to direct our enterprise towards a successful issue as Canada's Apple King.

As this meeting will be in the very heart of one of the foremost fruit producing regions of Canada, where are to be found some of the the most extensive and experienced of our fruit growers, a very large and enthusiastic gathering may be confidently expected, in spite even of the very busy season of the year.

THE DELAWARE RED WINTER.

Among the new apples whose merits are to be tested within the next few years is the Delaware, of which our coloured plate is claimed to be a faithful representation. It is a seedling, which originated on the farm of Wm. P. Corsa, and gets its name from the State of Delaware in which it was found.

It is described thus:—"Fruit medium to large, round, bright red, highly coloured; flesh fine grained, crisp, juicy, excellent, sub-acid; tree a vigorous grower, an abundant an early bearer." As a market apple it is compared with the Baldwin, and the Northern Spy; and it is thought to be adapted for a more southern belt of country than that in which these varieties flourish. We do not know that it has been as yet tested farther north than the State of New Jersey.

If adapted to our climate, its wonderful long keeping quality would certainly commend it to our Canadian growers; for if when grown in Delaware, it will, as claimed, keep in excellent condition until July or August, what might be expected of it when grown in the Province of Ontario?

THE LUCRETIA DEWBERRY.

A mistaken notion seems to have gone abroad concerning the object of

THE LUCRETIA DEWBERRY.

the plant distribution by our Association, viz., that it is merely an ordinary premium with the *Canadian Horticulturist*. The object, on the other hand, is the speedy and faithful testing of new or highly commended fruits in various sections of Canada, in order that the public may be thoroughly posted concerning the most reliable fruits adapted to the various localities of our Province, and not be left to the mercy of every travelling agent in deciding upon his purchases.

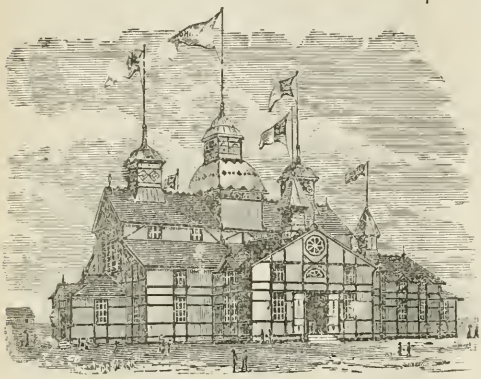
For the attaining of this end, we shall call, from time to time, upon our readers for reports concerning fruits sent out, and the replies may be sent in on post cards.

In the spring of 1886, the *Lucretia Dewberry* was sent out, and as it may in some cases be bearing its first fruit this month, or earlier if under favorable conditions, we would ask for reports concerning its growth, fruitfulness, hardiness, &c. Mr. J. H. Hale says, in the *Nebraska Horticulturist*, that he has visited the original plantations in Ohio, and found there large fields in fruiting. They are placed in rows eight or ten feet apart, with plants four or five feet apart in the row, forming a thick matted row or bed four or five feet wide. They throw up fruit spurs a foot or more high, which are laden with fruit as large as the Lawton blackberry, without its hard, ugly core, and of a most delicious spicy flavour. It ripens with the Gregg raspberry, a most favourable time for marketing it. He considers it as hardy as the Taylor, and as productive as the Snyder. Perhaps the question is premature, but we shall be glad to hear what our readers have to say of it.

OUR MEETING AT COLLINGWOOD.

THE OFFICERS and other members of our Association who attended the summer meeting were most kindly received by the Collingwood Horticultural Society, of which Dr. Stevens is the President and Mr. Jas. Gilfoyle the Secretary. This Society is amalgamated with the Township Agricultural Society, and together they hold a large annual Show, known as the Great Northern Exhibition. The quality and size of the apples, plums and pears shown at this Fair have already been noticed in this Journal; suffice it to say they surprise visitors from the more southern portions of Ontario who think that they alone know how to

grow fine fruit. The fact is, that the country about Collingwood and well



EXHIBITION BUILDING, COLLINGWOOD.

up the mountain, extending also to Meaford and points similarly situated along the Bay, is well adapted to the production of all the leading varieties of apples. The Spy, Baldwin, Greening, Russet, &c., all grow to perfection, and some orchardists there claim they can even grow the Early Harvest and the Fameuse, without spots.

The discussions at the day meetings were very valuable, but as they have been carefully taken down by an able stenographer for our next Annual Report we need not repeat them here.

A fine

PUBLIC MEETING

was held in the Town Hall, on Wednesday evening, the 29th inst. The place was literally full of ladies and gentlemen, who, notwithstanding the intense heat, listened with much evident interest to the addresses and music which made up the programme. His Worship the Mayor gave an address welcoming our Association to Collingwood, and expressing his belief that our coming would aid in advancing the interests of the town.

Our President gave a very valuable address, indicating the improved prospects now before Canadian fruit growers for foreign shipments, largely as the result of the Colonial Exhibition.

It was certainly encouraging to those of us who have invested our money largely in apple orchards, and were beginning to fear that the fruit would be a drug, to hear of the enquiries for Canadian apples not only in the British market but also on the Continent, and that almost every steamer is bringing over representatives of English houses desirous of procuring shipments from us. Mr. D. W. Beadle, Colonel MaGill and others also addressed the meeting, and the intervals between the addresses were enlivened with excellent music by some first-class local talent.

On Thursday afternoon about four o'clock when the discussions were ended, the Horticultural Society gave us all a

DRIVE INTO THE COUNTRY.

The procession of carriages formed at the Grand Central Hotel, and the whole party was conveyed out some eight or nine miles through Nottawasaga township to Duntroon. The scenery shown us was very beautiful, both going out with the mountain as a background to the picture, and returning along the "tenth line" where, at many points, we were high up the mountain with one of the most picturesque views possible opening up at intervals. Yonder, the stirring little town of Stayner nestled among the trees, and there, on the shore of the Georgian Bay which curves away toward Penetang and Parry Sound, lay the thriving town of Collingwood, with its five thousand inhabitants and its busy wharves.

Nottawasaga is pronounced to be one of the finest wheat-producing townships of Ontario, and we would infer as much from appearances, for almost every

available plot of ground, not excepting even the front yards of the farm houses, is occupied with this cereal. But although the capabilities of the soil are so good in this direction at present, the continual cropping of the soil, without fertilizers, will slowly but surely bring about a time when wheat can no longer be grown with profit. No doubt our visit would be a fortunate one for many of these farmers, should their attention be thereby directed, more or less, into the cultivation of such staple fruits as will succeed. The section is especially adapted to

PLUM CULTURE,

and it was shown by the discussions that all the best and most profitable varieties, such as Lombard, Imperial Gage, Pond's Seedling, Washington, &c., grow finely and produce fruit in great abundance. The Curculio and the Black-Knot are comparatively unknown to many plum growers in this favoured district. Samples of plums were laid upon the table at the meeting in such immense clusters as to call forth many exclamations of surprise. The writer counted upon one branch of the Lombard, about six inches long, no less than fifty fine, healthy plums; nor was this an exceptional branch but a fair sample of the crop in general. No wonder, under such conditions, that Mr. Brown's experience with Lombards was, that the trees had literally borne themselves to death. *Thinning* was advised, but many seemed to think it would be too much trouble. What a long time it takes to educate our farmers and fruit-growers to the importance of giving more attention to just such particulars in order to attain success in fruit culture.

The experiment of shipping plums from Collingwood to Winnipeg by water has been successfully tried by Dr. Aylesworth, jun., who has a fine large plum orchard, and it appears that there is a particularly good market for Collingwood plum growers in this direction.

We have already said that most of the standard varieties of apples succeed well in the neighbourhood of Collingwood, and along the shores of the Bay; and farther back in the country where these fail, the Duchess, Tetofsky, Wealthy, Alexander, Haas, Brockville Beauty and Red Pound have been found hardy and profitable. In addition, we would suggest a trial of the Shiawassee Beauty, the Salome, the Cellini, and the McLellan of Vermont.

Small fruits are especially adapted to this district. Samples of as fine Crescent, Sharpless and other strawberries were shown at the meeting, by local growers, as could be shown in any other part of Canada, showing that Collingwood has no need to depend upon Toronto fruit dealers for her supply of this fruit, for if her gardeners but awake to their privileges, they will be fully able to furnish their own markets.

The streets of Collingwood have been largely planted with the Willow and the Lombardy Poplar, because it was supposed that other street trees would not succeed well, and, indeed, the few Maples we saw lacked that thrifty growth and dark-green foliage which they exhibit elsewhere. But we noticed the native Elm springing up freely along the road-sides everywhere, and surely its value must be underestimated. No tree is better adapted to street-planting. The close habit of growth and the dense foliage of the Maple so shut in a street that, not only the view, but even the light, is half excluded; while the beautiful curving branches of the Elm form a magnificent archway over a road, without too much obscuring the view.

Dr. Stevens showed us a curiosity on his lawn. It was a *variegated*

Horsechestnut, or at least one part of the tree has now for two years persisted in producing leaves beautifully variegated with white and green. If this curious growth could be propagated by budding or grafting, it would indeed be a desirable object upon a lawn.

Our Association carries away from the Collingwood friends their hearty good wishes, and an earnest invitation to revisit that town at as early a date as possible.

KEEPING QUALITIES OF THE WEALTHY APPLE.

A. HOOD, BARRIE.

My attention has been called to the keeping and other qualities of the Wealthy Apple, by reading an article in your July issue from the pen of T. H. Hoskins, of Vermont.

Although this variety has been steadily gaining in favour since its first introduction, I feel sure that it is not even yet appreciated at its proper value; for when we take into consideration the hardiness of the tree; the early age at which it comes into bearing; its regular annual productiveness; fine size, beauty, and regularity of the fruits; and its high standing as a dessert as well as a cooking apple; where, oh where! particularly in the north shall we turn to find its equal?

The distribution of fruit all over the branches instead of being clustered on spurs is, as remarked by Mr. Hoskins, one great point in its favour; and another, on which he is silent, but on which I can scarcely set too high a value is that when the apples do fall off the trees, which they are as little likely to do as any other kinds; they will not show a bruise, and can be sent to market along with the hand-picked without fear of complaints; and as regards keeping qualities I am a little afraid to tell the truth for fear I may not be believed.

On reading Mr. Hoskin's article, which was of course after 1st July, where he speaks of having them in good condition till 23rd March, I remember that my wife brought a plate of Wealthys out of the cellar about the 1st June, and they were then in good eating condition, so, thinking it possible there might be some left, I brought up a crock in which the remains of my stock of one kind or other had been left to get rotten, emptied out the contents, and found amongst them four or five sound Wealthys, and a number half rotten; the sound ones were plump as when first picked, the juice of the half rotten ones having swelled the flesh, and in good eatable condition.

Now will your readers be able to believe that I have sound Wealthy apples on 3rd July, in this jubilee year, that were grown in 1886? Perhaps not, but it is a fact nevertheless, for they were picked on the first week in October; were kept in a cellar that was not frost proof, and were consequently frozen; they remained in that condition a couple of months or so, came out of the frozen state uninjured, and have kept as above stated.

JUDGING FRUITS.

President Lyon writes a very sensible article in the *Rural* about judging fruits, showing that the work of the judges may be very materially lessened and their investigations directed by care in framing premium lists, and by certain judicious rules. Speaking of the Michigan State Horticultural Society he writes as follows:—

"The fruits grown in the State, whether valuable or otherwise, are alphabetically arranged in the society's catalogue, and the comparative values of the varieties are given by means of a scale, varying from 1 to 10; the values for cooking, market and dessert being

placed in separate columns. The sum of the values of the varieties found in a given collection, taken from the column devoted to the purpose for which they were entered, will properly express the aggregate value of such collection for such purpose, and a comparison of the aggregates of competing collections will determine the award, subject, however, to modifications for superiority of size, freedom from blemishes, careful handling and taste in the arrangement and ornamentation. This society instructs its judges of fruits to exclude from competition all unlabeled and incorrectly labeled specimens, and to consider, 1st, the values of the varieties for the required purpose; 2nd, the color, size and evenness of the specimens; 3rd, their freedom from blemishes, the apparent care in handling and the taste displayed in their arrangement for exhibition. Duplicates are excluded from the competition, and large, showy, but indifferent varieties are held to discredit a collection.

Instead of the usual, "Best collection," the society stipulates, in each offer of a premium: For dessert and family purposes, for the most useful and best grown collection, giving a succession of varieties, superior quality, delicacy of texture and beauty (in order named), to take precedence of profitableness and size. For market varieties the requirements are: For the most valuable and best grown collection, selected strictly for market purposes; productiveness, suitable, even size, handling qualities; color and succession being the leading considerations.

As will be seen, these offers bring together the conditions required, just where both the exhibitor and the judges can scarcely fail to become familiar with them; while the idea is definitely conveyed that the value to be attached to a given variety depends not upon its general merits, but strictly upon its merits for the purpose for which it is placed in competition.

This process brings out the opinion of the exhibitor as to the relative merits of the varieties which he may enter, for the required purpose; while the awards, if fully reported, with the reasons therefor, also afford a clew to the estimate of their comparative values for such purpose, by the judges."

The society's catalogue referred to by Mr. Lyon, classes all fruits under three heads, viz. dessert, cooking and market, and grades the value of a perfect apple under each on a scale of one to ten. Competing collections are placed together, and a committee on correct nomenclature precedes the judges, and corrects erroneous names, and excludes such fruits from competition.

Under the head of market, the question of profit is a leading one, but it is not considered under either of the others.

The report of the Fruit Grower's Association for 1884 contains a very full catalogue of Canadian fruits, valued on a scale of 1–5, under six heads, with many additional remarks. This should be of great value to all local societies, and a copy should be in the hands of the Directors of every Agricultural and Horticultural society in the Province.

HORTICULTURAL NOTES.

Ringing Vines.—E. A. Carrière, in the *Revue Horticole*, favors ringing the vine, even in large vineyards. He says it advances the ripening of the fruit at least eight days, and in no way injures the quality of the wine.

Most American authorities, however, condemn the practice, especially in growing fruit for dessert, claiming that the increased size is gained at the expense of flavor. It may be done at any time during the growing season, but to have much effect should be done several

weeks before ripening of the fruit. It is done by removing a ring of the bark about half an inch wide, from such fruiting branches as are to be removed at the next pruning.

Summer Pruning Grape Vines.—There is no art in summer pruning grape vines. Simply do not allow any shoots to grow that you do not want to retain next year. Go over the plants occasionally and rub out with the finger and thumb the sprouts you do not want. This is particularly desirable in young vines. —*Gardener's Monthly.*

No Cultivation.—Col. Curtis writes in the *American Garden* that he considers the plow an enemy to orchards. The trees are bruised and barked, and the roots are torn, thereby checking the growth and reducing the feeding capacity of the trees. The orchards are also made prematurely old. His plan is to build a secure fence about his orchard, and make it a pasture for hogs. It makes a perfect pig paradise. He feeds them in movable long wooden troughs, in which he scatters grain or meal when required.

The Concord Grape.—Mr. S. S. Crissy writes in the same journal, that the experience of Chautauqua County, N.Y., growers is that no grape is so uniformly and certainly sure to yield a good crop as the Concord; and no grape is more free from mildew and black-rot.

Six tons per acre has not been an unusual yield, as the result of the best modes of tillage. Frequent shallow cultivation is given from May 1st to Sept. 1st, and phosphate and potash are applied.

The Concord needs special care in handling. Easily injured when first picked, it can be handled much better after standing from 24 to 28 hours.

Apples kept till July. — The *Prairie Farmer*, of the 18th June, says that at that date there were ten or more varieties of winter apples still offered for sale at from $4 to $6 a bushel. The apples are kept in good condition by cold storage until the 4th July. Some of the most valued kinds for keeping in this way are Golden and Roxbury Russett, Ben Davis, Willow Twig, and Baldwin; the two last-mentioned not keeping as long as the others.

The Yellow Transparent Family. — Dr. Hoskins has an article in the July number of the *American Garden*, in which he says that his experience leads him to believe that the Charlottenthaler, Sweet Pear, and Grand Sultan are *one* variety, and that the Yellow Transparent, Green Transparent, and White Transparent are *another* variety. The apparent differences between the latter seem to be occasioned by poorer or richer soil, or by earlier or later picking.

The clipping of the growing ends of Raspberry and Blackberry bushes, if not already done, should be attended to at once. We do not want great long straggling fruitless canes, wasting their energies in trying to occupy as much ground as possible, and in blocking up all accession to their fruit. We want the canes to branch, and to be kept well under control. The writer has found a pair of hedge shears most useful in cutting back the canes.

The Parry Strawberry, says Mr. Upson in *Prairie Farmer*, is very fine in shape, large and productive. But in Indiana it ripens very little earlier than the Sharpless.

The Crescent. — Whatever objections may be made to the Crescent as a market strawberry, it still holds its own as the favourite berry for profit. The coming berry does not come, and until it puts in an appearance the Crescent will be the leading market berry. From reports received from many sections, it

appears that the Sucker State has given the largest general satisfaction as a fertilizer of the Crescent. The Sharpless, that at one time was considered the best for the purpose, has lost its reputation as a fertilizer.—*F. G. Journal.*

Scientific.

THE STRAWBERRY WEEVIL.

BY JAMES FLETCHER, ENTOMOLOGIST TO THE DEPARTMENT OF AGRICULTURE.

I am in receipt of your letter enclosing insects for identification. Although the specimens were much crushed in the mail they are easily recognizable as *Anthonomus Musculus*, a small weevil which has for the last year or two been very troublesome in the United States, attacking strawberries in the same way as you describe. They are reported to be particularly partial to the "Sharpless." I had not, before the receipt of your letter, heard of the injuries of this insect to strawberries in Canada, although it is a common species upon bushes and low herbage in spring. Another species of the same genus—*A. rubidus*—I have found very injurious to white currants in my garden, and it occasionally attacks black currants also. This attack, however, differs from the strawberry attack which you have described. When the white currants are injured they turn yellow prematurely, and drop from the bunch. The beetle passes all its stages inside the fallen fruit, and emerges in the perfect form during the autumn. At least, this was the case with many specimens which I confined for examination last season.

The only treatment which occurs to me as likely to succeed is the use of preventive remedies, to deter the insects coming to the strawberry beds to oviposit, for I anticipate that each of the buds, which are bitten off, will be found upon examination to contain an egg of the insect. As a preventive remedy to protect my currant bushes against *A. rubidus*, I puffed pyrethrum powder over the bushes twice a week, from the time the flowers opened until they were fully formed. I also sprayed them once with a carbolic wash, and now find the fruit quite sound.

For strawberry beds, the following occur to me as remedies which might be tried :—

1. A light sprinkling of fresh gas-lime between the rows directly the insects begin to appear.
2. Spraying the beds either with an emulsion of coal-oil and soap-suds, or with a carbolic wash.

The coal-oil emulsion is probably well-known now to most fruit growers in Canada, but it may be well to repeat here Dr. Riley's formula :—

Coal-oil, 2 gallons ; rain water, 1 gallon ; common soap, ½ lb. Or in smaller quantity : Coal-oil, 1 pint ; rain water, ½ pint; soap, 1 oz.

Dissolve the soap in the water, and add it boiling hot to the coal-oil. Churn the mixture for five or ten minutes by means of a force-pump and spray-nozzle ; or the smaller quantity by placing it in a large bottle, and shaking it violently for the same period. The emulsion, if perfect, forms a cream, which thickens on cooling, and *should adhere without oiliness to the surface of glass.* Dilute before using 1 part of the emulsion with 9 parts of cold water.

The carbolic wash referred to above is that used so successfully by Prof. A. J. Cook, of the Michigan State Agricultural College, as a preventive remedy to protect radishes from the root maggots of Anthomyian flies, and is as follows :—

Dissolve 2 quarts of soft soap in 2 gallons of water, to which, when heated to the boiling point, add 1 pint of crude carbolic acid. For use take one part of this mixture to fifty of water, and spray directly on to the plants.

One application every week to raddish beds I have found to protect them very satisfactorily.

I shall be obliged if you can procure me specimens of the injured strawberry bud.

THE DOWNY MILDEW OF THE GRAPE.

BY D. W. BEADLE, ST. CATHARINES, ONT.

It is very probable that many Canadian vineyardists have suffered more or less from the ravages of this parasite. Possibly they have not known its proper name, nor been able to distinguish it from other forms of mildew; but it is the most common form that infests our grape vines, and usually the most destructive in our climate.

We shall endeavor to give our readers such a description of it that they will have no difficulty in recognizing it, if it should appear; and what is better, give them a remedy that has been found effectual in Europe, and therefore worthy of careful trial here.

Mr. F. Lamson Scribner, of the United States Department of Agriculture, has made a very full report on the fungus diseases of the grape vine; and having been favored with a copy, we shall avail ourselves of his labors to give further publicity to information so valuable to every grower of grapes. We shall for the present confine ourselves to the Downy Mildew, hoping at some future time to take up the other fungi. The downy mildew is known to botanists by the name of *peronospora viticola*, and attacks our wild as well as our cultivated vines. It preys upon all the growing parts, leaves, young shoots and berries; and when very abundant so weakens the vine as to render it almost or quite worthless.

The first intimation that the vineyardist has of its presence is the appearance of small, irregular, light green, or yellowish spots on the upper side of the leaves. On turning up the leaves he will find that there is on the underside, directly beneath the spots on the surface, white patches, which have the appearance of mould or mildew. These white patches are composed of the spore bearing filaments, little threads which have come up through the pores (stomata) of the leaf, have branched and fructified. The spores are borne on the ends of the branches. Four to even eight of these spore bearing filaments issue from each leaf pore, and it is because they are so numerous that they become visible to the naked eye. What we see, therefore, and call mildew, is only the functifying portion of the plant, the vegetative portion is concealed from view in the body of the leaf.

The vegetative portion is called the "mycelium," and grows between the cells which compose the tissue of the leaf, or of the young shoots, or grapes. This portion has the appearance of minute threads, on which are formed at frequent intervals small lateral projections that penetrate the walls of the cells of the vine, absorbing therefrom the nourishment which supports the fungus. It will be seen therefore that the destructive work is done by the portion of the fungus that lies concealed from observation in the tissues of the leaf, or berry, or young shoot. The contents of the cells that are thus perforated by these small lateral projections (called "suckers") soon turn brown, which causes the discoloration that meets the eye.

We shall now show how, and under what circumstances or conditions, this mycelium or vegetative portion of the fungus gains entrance into the tissue of the leaf or fruit. It has already been noted that the downy growth which is seen on the underside of the leaves is composed of filaments bearing, on the ends of their branches, spores. These spores are called by botanists *Conidia*. They are reproductive bodies. When one of these falls on a leaf wet with

dew, or fog, or rain, it begins to swell, the contents divide, and in an hour and a quarter the segments resolve themselves into oval bodies, which soon rupture the wall of the spore and make their escape, passing out slowly, usually one at a time. Shortly after this each of these oval bodies begins to move, separates itself from its fellows, and at length darts off with great rapidity. They are now called Zoospores, having for about twenty minutes the power of locomotion, at the end of that time they cease to move, and in about fifteen minutes after, an outgrowth appears on one side, which develops into the mycelium of a new plant. The usual number of zoospores that is produced from a conidium is five, each of which becomes a new plant. The number of conidia that may be produced from a single infested vine is to be reckoned by millions, some computations going as high as ten millions, but if we put it at five millions, and each of these should find the conditions favorable to reproduction, then we have to multiply that five millions by five, so that we have the almost incredible number of twenty-five millions as the product of one infested grapevine.

Fortunately the conditions are not always present that favor the reproductive process. There must always be the presence of water, else the conidia cannot produce the zoospores; and although the process we have described is not the only method of reproduction that these wonderful plants possess, yet in none of their modes of reproduction can germination take place without the presence of water. A moist atmosphere is not sufficient. There must be drops of rain or dew upon the leaves, or fruit, or growing branch into which the conidia fall, in order to their further development. We now understand why it is that this form of mildew is more prevalent in wet weather. Mr. William Saunders, in the United States Agricultural Report for 1861, describes his method of availing himself of this fact in order to prevent the attacks of this mildew, which was, to place a covering over the trellis of sufficient width to prevent the fogs, or dews, or rains, from wetting the foliage.

We have already shewn that the vegetative portion of the fungus, called the mycelium, grows within the tissues of its host, hence it is impossible to destroy the plant in that stage without destroying the leaf also, or the fruit, if the fungus be growing in the fruit. Our hope is to find some means of preventing the conidia from performing their office of producing the zoöspores, from which the new plants are developed. Mr. Saunders' method may do in small vineyards, but is difficult of application to large establishments.

The remedies that have been found serviceable in Europe will now be enumerated, in the hope that they will be carefully tested during the present season, and their usefulness in our climate definitely ascertained. If we shall be able to combat this pest of our vineyards with some measure of success, we shall have gained much toward the solution of profitable grape culture in Ontario.

Sulphate of Copper, either alone or in mixture, has been found efficacious in destroying the germs of this fungus. The following preparations have been recommended for trial by the United States Commissioner of Agriculture.

First—Spray the vines with a solution of 1 pound dissolved in 25 gallons of water.

Second—Dissolve a pound in 4 gallons of warm water; when completely dissolved and the water has cooled, add 1 pint of commercial ammonia, and dilute this by adding 18 gallons of water, and with this spray the vines. The concentrated solution, that is, the four

gallons to which the ammonia has been added, should be kept in a keg or other wooden vessel, and diluted as used.

Third—Dissolve 16 pounds of the sulphate in 22 gallons of water. In another vessel slake 30 pounds of lime in 6 gallons of water. When the lime and water have become cold, pour it slowly into the sulphate solution, stirring constantly, so as to mix thoroughly. It is recommended to prepare this compound some days before using. When used it should be well stirred, and may be applied by dipping a wisp into the mixture, and switching it to the right and left, so as to scatter it over the foliage. In large vineyards it will be less wasteful to use a pump with nozzle specially constructed for the purpose of applying this compound.

As these applications are only preventive in their operation, and by their use we can only hope to destroy the spores, either in the conidia state, or at the latest as zoospores, before the mycelium or vegetative portion has made its way into the tissues of the plant, it is therefore important that we do not wait to see the spots on the leaves, or the discoloration of the fruit before we apply the sulphate, or some of one of these mixtures, but rather apply at once, and repeat as often as the application is washed off by the rains.

The sulphate of copper is not expensive, the cost as given by the Commissioner is only six cents a pound by the barrel, and ten cents at retail, and the commercial ammonia is the same.

In addition to these applications, the careful vineyardist will take measures to destroy all the germs that winter over. We have not given the life history of these, it being a matter of interest to the botanist more than to the general reader; it will be sufficient for the present to say that these winter germs, as they have been called, pass the winter in the tissues of the dead leaves, or dried up berries, and possibly upon the branches. Hence the importance of gathering all the leaves and fallen fruit with a fine-toothed rake in the autumn and burning them. Also after pruning the vines, to gather the trimmings and burn these. In addition to these precautions, the naked vines should be washed with a strong solution of sulphate of iron.

The sulphate of iron is also an excellent fungicide, and possesses this advantage over the sulphate of copper, that it is not so poisonous to human beings, and is also less costly.

We should be pleased if some of the readers of the *Canadian Horticulturist* would substitute the sulphate of iron for the sulphate of copper on some of their vines, where the downy mildew appeared last year, and report the result.

A CAUTION REGARDING THE USE OF PARIS GREEN,

NOTICES have appeared from time to time of the efficacy of Paris green and London purple in destroying the Colorado beetle and its progeny, and more recently the use of Paris green has been strongly recommended in dealing with the Codlin moth.

There is no question as to the value of these agents as insecticides, but there are other considerations as regards ourselves and those who are to come after us which should make potato growers and orchardists pause before applying Paris green, *et omne hoc genus*, in the liberal way in which it is now proposed to do. Paris green and London purple are preparations of arsenic, and arsenic is a virulent poison; so much so that one grain has been known to cause death, and poisonous symptoms have been caused by one-half, one fourth, and even by the one-eighth of a grain. On some of the lower forms of vegetable life—ferns and mosses—it does not seem to exercise any injurious effects,

but it is different with all the higher plants. Seeds soaked in a solution of arsenic will not germinate, and buds to which it has been freely applied will not expand, while the roots and young shoots of plants immersed in it perish. It has been stated in the pages of the *Horticulturist*, I think, that only the leaves of the potato can be destroyed or the petals of the apple blossom, while the tubers in the one case, and the fruit in the other, remain unscathed. But this is only partially true, and what truth there is depends entirely upon the circumstances of the application. The metal arsenic is insoluble in water, and so long as it remains insoluble it very likely would be harmless to plants. But it is freely soluble in the alkalies, potash, soda, and ammonia, lime and other earths, as well as acids resulting from decomposition of vegetable matter; all of which are more or less abundantly found in every variety of soil, and so soon as it is reduced to the solvent condition it is then readily taken up by the roots of plants, especially by those of the coarser vegetables, the potato, carrot, parsnip, etc. Similarly, also, in applying solutions of Paris green to the apple blossom, it is not only that the petals are destroyed, and this itself may be no small matter, but the poison may be absorbed by the fruit, or find its way into the ovary by the pistils, and in this way, if no greater mischief results, those who have a fancy for chewing the seeds of the apple may some day find themselves attacked with symptoms of arsenical poisoning.

There are other sources of danger besides, such as the contamination of drinking water, in wells, springs, streams, etc. But I fear that I have already occupied too much of your limited space, and therefore will not pursue the subject any further at present. Yours truly, C.

Durham, June, 1887.

Flowers.

CARE AND CULTIVATION OF LILIES.

BY HERMANN SIMMERS, TORONTO, ONT.

IN the last issue of the *Horticulturist* the subject of the principal finer varieties of Lilies was spoken of. There are many other varieties much more beautiful than

LILIUM TENUIFOLIUM.

those mentioned which I could write about, but they would be useless to the amateur, as I have frequently experimented with them and have found them unsuccessful, not only in wintering them, but also in persuading them to flower, even with the greatest care. If any amateur would like a description of any varieties that I may not mention I would cheerfully answer any such questions through the columns of the *Horticulturist*. By far the most general-

ly cultivated of all the lilies is the ever popular Lilium Candidum or ordinary sweet-scented White Lily, which thrives in almost any kind of soil, particularly however in sandy loam. This variety, if it is not already in the gardens of our readers, we would specially recommend for planting, as nothing is more satisfactory, not only on account of its fragrance, but also on account of its beautiful white wax-like flowers borne on a long stem, with from five to fifteen flowers on each stem. To a great many, any explanation of the care and treatment of this variety may seem superfluous, but to some. a few points may be added in order to encourage a larger growth of this justly popular variety. In planting for open air, the same care may be observed as was described in the July issue concerning the Lilium Auratum ; but as for ordinary forcing for the house I would not advise any amateur to attempt it, unless provided with the facility of a conservatory, when they may be planted during the month of September, and treated precisely the same as the Hyacinth for forcing. Lilium Candidum, when grown in the open air, is apt to propagate very freely, and in order to secure flowers yearly it is necessary, say once in three years, to take the main bulbs up, and detach any extra small bulbs that will certainly be attached to the parent bulb, replacing the large bulb and planting the smaller bulbs in a separate bed, where after three years growth they are sufficiently large enough to flower, and may be planted where it is required of them to do so. Another variety not very often seen in the garden, but, nevertheless, a very beautiful flower is the Lilium longiflorum album. This variety may be grown and propagated as easily as the Lilium Candidum, but its habit of growth is very much smaller, reaching only to the height of fifteen inches ; the flower is long tube-shaped, and bears about five to eight flowers on each stem. Lilium Tigrinum, or spotted Tiger Lily may also be classed among the varieties of easy culture, and is seen in almost every garden.

The Fuchsia should have rather a shady place, unless particular pains be taken to water it freely, If allowed to wilt, the leaves are apt to drop, and the plant then looks much like a pretty young miss shorn of her tresses. The plants should be turned out of the pots, except Speciosa and Mrs. Marshall, which are the best of winter bloomers, and should be grown in pots for that purpose alone. —*Orchard and Garden.*

The Crystal Palace Gem Nasturtium sent out last spring is just now in full bloom in our Experimental Grounds, and is very pretty. It produces a great abundance of pale yellow flowers with maroon blotches, a very pretty contrast to the ordinary shades.

Shipping Flowers.—Ladies in Crystal Springs, Miss., are shipping flowers to city markets. They receive in Chicago from $2.50 to $3 per 100 for Cape Jasmine buds, and a single rose bush has yielded $10 worth of bloom in one season.

Sunflowers.—Seedsmen state that of late years there has been an unwonted demand for seeds of sunflowers. It is a fact that a blaze of sunflowers gives conspicuous dashes of color to gardens. Some one has styled the sunflower "the king of the flower garden," and there is a kind of regal aspect about it. It is common to see flowers more than a foot across, and the dark centres stand out conspicuously when margined with their broad zones of golden petals. There are dwarf and tall forms of the single, and also of the double varieties. The last named, when of a fine double

character, are very imposing objects; but the current taste certainly runs in the direction of the single in preference to the double varieties.

Birds.

WIRE FENCES AND BIRDS.

SIR:—It is certainly pleasing to the eye to see straight, clean fences, such as those constructed of barbed wire, in comparison with the old style of snake fence; and a considerable saving of land is made by its adoption. Another advantage is the prevention of heavy snow drifts, and perhaps other good points might be claimed for the wire fence; but there is one drawback, and that is a serious one—one that requires more than a passing notice—viz.: the banishment of our small insect destroying birds.

We find, year by year, slowly but surely, the birds become scarce, particularly in those localities where the wire fence is most in use. The reason is plain to be seen. Along the line of the wire fence rubbish is seldom allowed to accumulate, the coarse grass is kept cut and no small bushes are allowed to grow, consequently there is no harbour or shelter for the small birds that live principally on insects. The result is the decrease of birds and the *increase of insects.*

In the old style rail fence all sorts of rubbish would accumulate; piles of stones, rank grass, small bushes, hazel, wild raspberry, wild currant, etc., would find a lodgment, affording the small birds shelter in rough weather, and protection and security in raising their young; for our common small birds do not build their nests in tall trees.

It is not likely we will ever go back to the old snake fence again; but if we want to retain our friends the birds, we must protect them, extend to them the blessings of National Policy, as well as to the manufacturers of barbed wire, and protect the birds, who are unable to protect themselves.

The first thing to do is to *enforce the law prohibiting the destruction of insect destroying birds*, and any and every man or boy found shooting or destroying the birds to lock him up and teach him better. Next, as it appears the wire fence has come to stay, we should *protect the birds by planting trees or hedges all around the farm*, or at least on the north and west sides, which will encourage the birds to stay. The trees or hedges will grow, and not only afford shelter for the birds, but form windbreaks, which are becoming so necessary in some localities. The loss sustained by the amount of land occupied by the trees will be repaid by the benefits derived in the shelter of crops from the bleak and raking winds, and the retention of the birds, which are the true friends of the farmer and of the fruit grower. "RUSTIC."

Mimico.

AN ENEMY OF THE ENGLISH SPARROW.

In a recent report from the Department of Agriculture Professor Riley states that the screech owl has proved useful in destroying the web worms that defoliate so many trees in autumn, and adds: "Perhaps the statement may be of interest that this little owl is getting much more common in the vicinity of cities in which the English sparrow has become numerous, and that the imported birds will find in this owl as bold an enemy as the sparrow-hawk is to them in Europe; and even more dangerous, since its attacks are made towards dusk—at a time when the sparrow has retired for the night and is not as wide awake for ways and means to escape."

Uses of Fruits.

Next in importance to the best modes of cultivation and the selection of the choicest varieties, comes the most approved methods of preparing fruits for use. We would be glad therefore if the ladies, who read this Journal, would make free use of this column for an interchange of ideas on this subject.

FRUIT JUICES MEDICINAL.

FREED of seeds, fruit juices are, says Miss Clarissa Potter, invaluable in correcting deranged bowels. They relieve constipation and check diarrhœa. This seems a contradiction, but personal observation justifies the statement. I was not afraid to give my nine-months old baby bread softened with these juices, when I found milk nauseated her, the child having inherited a strong antipathy against it, and, though my other children have been "bread and milk babies," she has always been a bread and fruit juice baby. A pint of red, ripe, currant, or raspberry juice tart, thick as cream, with flavour and sunshine, and as fresh as when swelling the ripe berry on the stem, is just the gift to send an invalid friend who is heartily tired of her moulds of insipid, sweetish jellies.—*Hort. Times (Eng.).*

Beware of Orange Seeds.—Several cases have been reported of late of death resulting from the swallowing an orange seed. The seed, lodging in the small intestines is productive of fatal inflammation.

Pineapple Water (a refreshing summer beverage).—Take a moderate-sized pineapple, pare and slice it, and pound it to a pulp in a mortar. Put this into a bowl with the strained juice of a large fresh lemon, and pour over it a pint of boiling syrup made in the proportion of 1lb. of sugar to a pint of water. Cover the jug which contains the liquid, and leave it in a cool place for two hours or more. Strain through a napkin. Put two pints of cold spring water with it and serve. Sufficient for three pints of pineapple water.—*Hort. Times.*

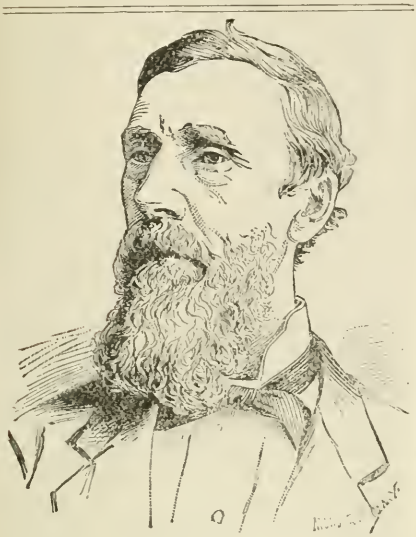
TO MAKE RASPBERRY VINEGAR.

WASH raspberries in a stone jar. To every pound of fruit add a pint of pure cider vinegar, cover, and let it stand three days; then press it through a jelly bag; to every pint put a half pound of lump sugar. Set the juice on the fire to come to a boil. Take off any scum that may rise. Allow five minutes gentle boiling. Set it to get cold, then pour into small bottles, cork with new corks, and seal. Two or three table-spoonfuls in a glass of ice water makes a delicious, refreshing drink in hot weather. Strawberries or currants can be prepared in the same manner.—*Horticultural Times.*

FRUIT STAINS.

In the season of fruits, the napkin used at the table, and often the handkerchiefs and other articles, will become stained. Those who have access to a good drug store can procure a bottle of Javelle water. If the stains are wet with this before the articles are put into wash, they will be completely removed. Those who cannot get Javelle water can make a solution of chloride of lime. Four ounces of the chloride of lime is to be put in a quart of water in a bottle, and after thoroughly shaking allow the dregs to settle. The clean liquid will remove the stains as readily as Javelle water, but in using this one precaution must be observed. Be careful to thoroughly rinse the article to which this solution has been applied in clear water before bringing it in contact with soap. When Javelle water is used, this precaution is not necessary; but with the chloride of lime liquid it is, or the articles will be harsh and stiff.—*Ex.*

Open Letters.



MR. LOUDON.

THE JESSIE.—SIR: In passing by the home of the Jessie, at Janesville, Wisconsin, on my way home from the North-west, I could not resist the desire to see the Jessie, so I laid over till the next train and I do not regret it, although I had to walk out about a mile. A very genial and kindly man is Mr. Loudon, and after a kind reception from his wife and himself, when breakfast was over, he took me to the Jessie field where he has 70 other new seedlings, some of them larger than the Jessie. You and others ought for yourselves to see the sight I saw. After three pickings they still lay in heaps around the plants. I could have had my eyes covered and went on any row and picked bushels of berries, of which twenty would fill a quart.

JOHN LITTLE, Granton.

SIR: I observed in your June number an article headed "The English Sparrow," where it is blamed for picking the heart of the plums and cherries when in bloom. Now I think your correspondent has made a mistake. There is a bird that might be mistaken for the sparrow — the purple Finch, *(Frigillia purpurea)*, which I have often detected in the same operation, but never the sparrows. They are a bold bird and beautiful singers. See Wilson's Ornithology.

JOHN McLEAN.

NIAGARA GRAPEVINE, INSECTICIDES, &c.—SIR: I am glad to inform you that the Niagara vine you so kindly sent me is thriving most vigorously. As it has been planted in an exposed position on the mountain, I will let you know how it stands the winter. As allusion is often made in the journal as to various insecticides, I would say that this year I have tried the "Slugshot," and have found it in every way satisfactory. This powder has kept the currant and gooseberry bushes entirely free from the caterpillar.

D. BERWICK.

Hamilton, June 30, 1887.

[NOTE. — The so-called "Slug-shot" owes its effectiveness largely to the presence of arsenic.—EDITOR.]

THE BLACK KNOT.—SIR: I fear we shall all be used up this year with the black-knot, which is far worse than than during any previous single year. It has struck all over the trees, both cherry and plum, so that I think I shall have to cut down many of them. I do not know if its ravages extend beyond our city, but doubtless it does, and fear there is no remedy but to wait until this generation is succeeded by a new order, for better or for worse.

C. JARVIS, Brantford.

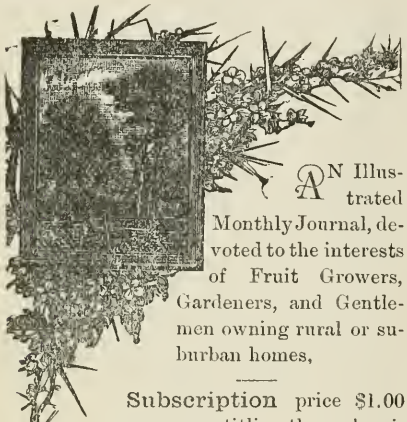
[NOTE.—Prof. Panton's paper at Collingwood showed clearly that the black knot is a fungus growth, propagated by spores, which scatter at maturity; and that the only way to check its progress is to cut off and burn all affected parts.—ED.]

CATALPA. — SIR : You may like to know that I have the Catalpa, in full bloom, here now. I see by the *Horticulturist* that it will not grow in every part of Canada. The blossom is large, very beautiful, and, if away from the tree, it would pass for an orchid, *i.e.*, for its delicacy of colour and form.

MARIA S. RYE.

Niagara, 2nd July, 1887.

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.

The Evening Primrose.—One of our subscribers who complained about receiving seeds of the Evening Primrose among our flower seeds sent out last spring, because it was a noxious weed, must surely be ignorant of the great difference between the native and the cultivated varieties. The genus Œnothera comprises some of our most showy summer blooming plants, and are highly prized in the best gardens. Some of the finest are natives of Texas, California, and Missouri.

Summer Pruning of ornamental trees and shrubs is commended by the *Gardeners' Monthly*. By this is meant a judicious thinning out, and the pinching back of growing branches of both deciduous and evergreen trees. The Scotch Pine may be made a "most beautiful ornament to the lawn, by cutting off its head when about ten feet high, and never allowing another to grow. The side branches are cut away, excepting the upper tier, which then spread and droop in such a way as to present a beautiful arbor-like form.

Many of our deciduous shrubs may also be much improved by clipping. At many of the Northern Railway stations, we noticed the Tartarian Honey-suckle, the Weigela, and other shrubs pruned into roundish or oblong shapes, with flat tops. Thus pruned they are adapted to small tidy lawns, where otherwise their natural free habits of growth would exclude them.

The Marlboro' raspberry is just now (7th July) ripening its first fruit of this season on our grounds. It is quite reassuring to find such stout canes, so well laden with large, bright, scarlet berries.

The Cherry Crop has been unusually satisfactory this year. The horrid aphis has been entirely routed by the friendly lady bug, and the rot upon the Biggareau varieties has been less destructive than usual. For several years past the Heart and Biggarean varieties have been such utter failures in the Niagara district that we were quite prepared to condemn them as being wholly unprofitable But this season it has been a pleasure to handle them, so fine

and large and clean was the fruit; and the market so greedy to obtain them. On the 5th July the Napoleon Biggareau and the Yellow Spanish, those most magnificent of white cherries, commanded no less than $1.90 per twelve-quart basket in Toronto market. Without doubt these two are the finest of the Biggareaus, as the Black Tartarian and the Black Eagle are the leading Heart varieties.

A New Asparagus.—The *Scientific American* speaks of a new variety of asparagus which has been discovered on the steppes of the Akhal-Tekiz. It grows perfectly wild; has stalks nearly as thick as a man's arm, and attaining a height of five or six feet. One of these immense stalks is said to be sufficient for a meal for ten Russian soldiers!

Pears.—The Duchess, Winter Nelis, and Seckel are regarded by the *Country Gentleman* as the pears least liable to blight. The Clairgeau and Urbaniste also promise well.

In our experience we may mention the Osbands Summer and the Flemish Beauty as among the most subject to this dread disease.

Tuition in Horticulture was the subject of of Secretary Garfield's first lecture at Cornell. He shows in it the inadequacy of books and lectures to teach this science, unless accompanied by practical work in the laboratory and in the field. He also points out the great value of horticultural periodicals, and of the meeting of practical men in horticultural societies.

The Corner Stone of the most richly endowed university in the world was laid on the 18th of last May at Pals Alto, in Santa Clara County, California. It is built by Senator Stanford, upon his cattle ranch of over 7,000 acres, and is endowed with about $20,000,000 *to begin with.* The plans are on a gigantic scale, and the curriculum is to include not only art and science, but courses in practical agriculture and horticulture under the most gifted specialists.

Does it not appear that the most thoroughly equipped universities of the future are to be those which are founded and sustained by private beneficence.

Prunus Simoni or Apricot Plum. Prof. Budd of the Iowa State Agricultural College writes of this plum as follows:—"It will be the king of fruits—better than any apricot. In France it is placed at the head of the plums. Hardy even here (42nd parallel). In all respects it is a botanical curiosity. In color of bark, and in all points except

PRUNUS SIMONI.

the net veining and color of the leaves. it resembles the peach. In fruit it comes nearer to a flattish, smooth, brick-red tomato than to any of our stone fruits; yet in smell and flavour it approaches very near the nectarine."

Unpaid.—We regret to find a good many on our lists who have not yet paid for the year 1887, and yet they have accepted from the post office seven

numbers of the Horticulturist for the year 1887. Those who send in their subscriptions may have the bulbs mentioned below if they so desire.

Fall Distribution of Bulbs.—Any subscriber, new or old, sending in his subscription of $1.00 to the *Canadian Horticulturist*, for either the year 1887 or 1888, between now and the first of November, may have a package of winter flowering bulbs sent him, post paid, early in November next. The package will contain 1 Hyacinth, 1 Narcissus and 1 Tulip, all named varieties. As the contract is with a reliable Canadian seedsman, we believe the bulbs will give the best of satisfaction, and we hope may be the means of introducing these floral treasures into homes hitherto ungraced by their beauty.

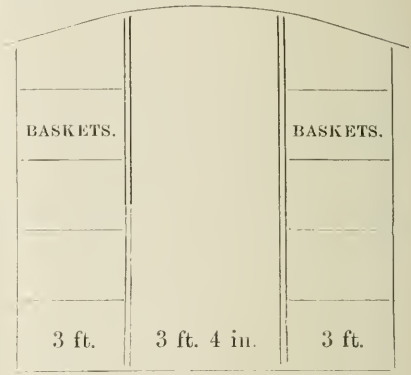
The Annual Meeting will be held at either Hamilton or Grimsby, about the last week in September. The annual address of the President will be a prominent feature of the occasion, and will be of special interest to apple growers, of whom we expect to see a large representation.

The Winter Meeting will be held at some point in the eastern part of the Province, possibly at Ottawa.

THE NEW G. T. R. FRUIT CARS.

On the 21st of June the first of these new special fruit cars passed through Grimsby. As fruit growers we hail with gladness any such improvement marking a step in advance in accommodation for the enlargement of our business.

The car is a fine large one, similar in size and shape to a passenger coach, with the same excellent running gear and easy springs, and is therefore far better than any freight car for the carriage of tender fruits, especially for long distances. The length of the car is about 40 ft. and the width over 9 ft. The car is shelved all around, with a passage lengthwise through the middle as well as across, thus affording easy access to packages of fruit in any part of the car. The accompanying sketch of a section of this car will aid us in giving our readers some idea of its conveniences :



G. T. R. FRUIT CAR—SECTION.

One of these cars will pass through the Niagara District every afternoon throughout the fruit season, gathering up fruit for the Montreal market from between the Suspension Bridge and Toronto. It will reach Montreal about 9 o'clock the next morning.

BUDDING.

The nurseryman's art of budding trees is a very simple operation, and easily learned by any one who is at all handy with his knife. It is so useful, too, that every fruit grower should practice it for himself. Perhaps some of our readers were trying to top-graft their apple trees last spring, and in some instances the scion has failed to grow ; in its place, however, several strong shoots have grown up by the side of the cleft. Now is the time, say from the 1st to the 15th of August, to make up for the failure of the graft by

inserting buds in these young thrifty sprouts.

First cut a fresh shoot, of this season's growth, from the kind of tree you desire to have, with well developed buds. Trim off all the leaves, leaving about a half inch of the petioles as a handle for each bud, as in Fig. 1. Then with a keen-edged budding knife remove the buds as required, taking care to cut as little of the wood as possible. Then make a T shaped cut in the stock quite through to the wood, as is shown in Fig. 2, insert the bud from the top downward, slipping it neatly into its place as in Fig. 3. Then tie snugly with bass bark, or yarn, as shown in Fig. 4.

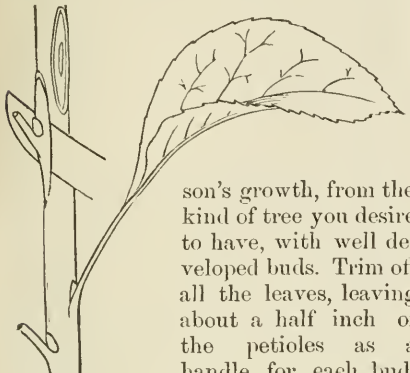


Fig. 1.

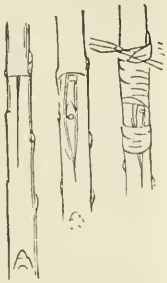


Fig. 2. Fig. 3. Fig. 4.

Plums and pears (on pear stocks) should be budded in July, while peaches are budded during the first half of September. These latter may be worked with greater ease and success than any other tree, providing always the stalk is the current season's growth from the peach pit.

About a fortnight after budding the bandages should be loosened, and then left until the following spring, when, if the bud is alive, the stock should be cut off about an inch above the bud.

This is the whole secret, and we give it to our readers hoping the practice of it may prove both interesting and profitable to practical horticulturists.

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.

55. Tomatoes.—*As many of my friends are contemplating going rather largely into tomato growing for the Canning companies, could you kindly state the kind of soil suitable; also the best artificial manure and the best variety to grow.* [D. Berwick, Hamilton.]

The best soil for the tomato is a light sandy loam, which of course should receive very frequent cultivation. Probably there is no more profitable variety than the Trophy, if true to name. We are trying this year the Improved Trophy and the Perfection, the latter of which is highly commended by Mr. John Harris, of Rochester, and will report later on the result of the comparison. Has any reader tested artificial manures for the tomato?

56. Hardiest Apple Trees.—*Please state which are the hardiest apple-trees for this section; which the largest gooseberries and currants; and which plum-trees do not get the black knot.*

[A. Doberer, Hanover, Grey Co.]

(Summer) Red Astracan and Yellow Transparent and Duchess of Oldenburgh; (Fall) Alexander, Haas, St. Lawrence, Cellini; (Winter) Wealthy, American Golden Russet, Wagner, Westfield Seek-no-farther.

57. Gooseberries and Currants.—The large English gooseberries, such as Crown Bob and Whitesmith, mildew badly in Canada. The largest kinds that will succeed are Downing, Smith's Improved, and Industry. The Cherry is the

largest currant, but bears very poorly on light soil. Fay's Prolific is about as large; the bunch is much longer, and it is a much better bearer.

58. Plum-trees.—We know of no kind entirely free from black knot. The Moore's Arctic is claimed to be comparatively free.

59. Evaporators.—*Which kind is best? Are other fruits, besides apples, successfully dried? What about markets? What about a vinegar department? Are the peelings and cores worth drying for jelly?* [A. Slaght, Waterford.]

60. Budding.—*In cutting the bark of the stock to insert the bud, should both the outer and inner barks be cut through to the wood?* [R.]

Yes. See p. 189.

61. Cold Grapery.—*Please inform me if there is any objection to my leaving the ventilator of my cold grapery open all night this hot weather. Is it likely to induce mildew?* [R., Toronto.]

Reply by D. W. Beadle.—Mildew is frequently caused by sudden changes of temperature especially if accompanied by draughts of air. If R. can be sure that the wind will not veer to the north-west during the night and blow a gale of chilling air through his vinery, then he can safely leave the ventilators open.

62. Plow.—In reply to an enquiry of a subscriber for a plow to throw heavy sub-soil to the surface, Mr. Wm. Rennie says: "I do not know of one manufactured in the County of York. I do not approve of throwing the sub-soil on the surface, but would rather keep the fine mould on top by following an ordinary plow by a sub-soil plow."

63. Gladiolus Lemoinei.—*I intend trying to protect Gladiolus Lemoinei this winter. What do you think of my prospects of success?* [J. A. M., Wingham.]

Mr. A. Simmers answers as follows:

Gladiolus Lemoinei will need to be well protected with a heavy covering of straw litter or else I would not give much for the chances of success in winter of such tender bulbs. I would advise putting them in a sheltered place and then you may succeed in wintering them over.

64. Lilium Longiflorum.—*Do you think Lilium Longiflorum would stand remaining in the ground all winter; thermometer going down to 30 below zero sometimes?* [J. A. M., Wingham.]

Mr. Anton Simmers says in reply:

Longiflorum will stand without fear of freezing or failure in the open ground all winter, where the temperature goes down to 30 below zero. To ensure it, however, better cover the Lilium Longiflorum with manure about half a foot, and a board over it.

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.

BOOKS.

Elements of Botany.—Including Organography, Vegetable Histology, Vegetable Physiology and Vegetable Taxonomy and a Glossary of Botanical Terms, illustrated by nearly five hundred engravings from drawings by the author. By Edson S. Bastin, A.M., F.R.M.S., Professor of Botany, Materia Medica and Microscopy in the Chicago College of Pharmacy. Cloth, Octavo, 300 pages, price, $2.50. Chicago: G. P. Engelhard & Company: 1887.

Bastin's Botany is a fairly got up volume of 300 pages. The intention of the writer is to supply a text-book for our High Schools, Academies and Medical Colleges, which shall also be sufficiently clear to be understood by young beginners, and prove a means of attraction to them in this most delightful of studies.

The freshness of the illustrations, which are largely drawn by the author, and the constant references by this means to well-known plants is a very valuable feature of the work. One is thus introduced to the study of nature in the most natural and easy manner.

Part I. is devoted to Organography, and takes up 1st, the organs of vegetation, and second, those of reproduction. Practical exercises are appended to each chapter, a most useful addition especially for the student who wishes to pursue microscopic examination of plant life apart from the class-room. The subject of *Plant Hairs* is considered by the Professor as of sufficient importance to occupy a whole chapter. Those upon the roots are shown to be useful in absorbing nourishment from the soil, while those on the stems and leaves are active agents in absorbing nitrogenous compounds from the air. This is of interest to us just now when so many are discussing the sources of nitrogen for the supply of plant growth.

Part IV., which is devoted to Vegetable Taxonomy, or the classification and naming of plants, is also a valuable contribution to Horticultural Science. Prof. Bastin divides vegetable life into seven groups, beginning with such low organisms as jelly-like sea-weeds and bacteria, and gradually leading the student on up through the various kinds of parasitic fungi which play such an important factor in the injury or destruction of plant life, to those mosses and ferns and flowering plants which are commonly treated of in our botanical text-books.

In our humble opinion, however, the book has one serious fault, viz. its advocacy of the doctrines of Evolution. Why should a botanical text-book so step out of its sphere—viz. the study of nature as it is—as to deal with metaphysical hypotheses? Because there is a wonderfully planned gradation of species from the lowest to the highest forms in both animal and vegetable life, why should the botanical student be expected to swallow such teaching as the following, found on page 173?

"Plants and animals resemble each other fundamentally; the protoplasm which constitutes the physical basis of life of both has in both the same essential properties. We must regard plants and animals as two branches of a common trunk. *The first living being that made its appearance on our globe was probably neither distinctly plant or animal, but a bit of undifferentiated protoplasm (!!)*"

Has Prof. Bastin, or Prof. Huxley, or Prof. Darwin ever yet discovered one single instance of one genus of either plant or animal life, reverting to an inferior one, or of one new genus developing from an inferior one? Is there any proof on p 22 where we read:

"As now in tropical regions evergreen trees are much the more common, while in our own climate they are rare, there is good reason to believe that in the warm ages of the world preceding the ice period, all trees were evergreens, and that our northern trees have become deciduous-leaved by gradual adaption to the vicissitudes of the climate."

Did any one ever find a Norway Spruce in process of development into an apple tree, or an apple-tree reverting into the direction of a Norway Spruce.

Granting that vegetable growth may somewhat adapt itself in time to its surroundings, and this is all that has been proved, we cannot see in this the slightest ground upon which to base the theory that one genus has ever, or ever will, pass into another by any power except that of the Divine Being who first originated it and bestowed upon it its essential characteristics.

Annual Report of the Minnesota State Horticultural Society. Cloth, 486 pp. Secretary, S. D. Hilman, Minneapolis, Minn.

This report is full of valuable information concerning hardy fruits for our northern sections. For instance, on page 151 we notice a *black list* of

apples usually counted hardy, but proved to be only half hardy, and considered dangerous to plant in large quantities. The kinds mentioned are Mann, Bethel, Walbridge, Haas, Peewaukee, Alexander, Borsdorf, Northern Spy, Salome, Utter, Fameuse, and Wolf River.

Transactions of the Indiana Horticultural Society, for the year 1886. Cloth. C. M. Hobbs, Bridgeport, Secretary.

In this report are included papers and discussions on the following subjects: Village Improvement Associations, Ethics of Horticulture, The old Grape Vine on the Wall, A glance at Horticultural Interests in England, Grafting and Budding, The other side of Fruit Culture, Ornamentation of School Property, &c.

Transactions of the Massachusetts Horticultural Society, for the year 1886. Part II. Robt. Manning, Boston, Secretary.

Fifth Annual Report of the Ohio Agricultural Experiment Station for 1886. W. R. Lazenby, Secretary of the Board of Control, Columbus, Ohio.

Report of the Entomologist, 1885. Jas. Fletcher, Department of Agriculture, Ottawa.

(Correspondence, and small packages containing insects for identification may be sent by mail, and will receive prompt attention.)

Report of Sir Charles Tupper, G.C.M.G., C.B., Executive Commissioner on the Canadian Section of the Colonial and Indian Exhibition at South Kensington, 1886.

The North-West of Canada. A general sketch published by authority of the Department of Agriculture, Ottawa.

Calendar of Queen's College and University, Kingston, Canada, for the year 1887-88.

Seventeenth Annual Report of the Entomological Society of Ontario.

Copies of this Report will be sent to members of the Fruit Growers' Association in course of time.

Humorous.

"WHAT do you grow on this land?" he inquired of the farmer who was leaning over a fence inspecting a particularly barren piece of ground. "Grow lazy," was the satisfactory reply.—*Field and Farm.*

A BOOK of rules for playing lawn-tennis has been published, but it omits the most important rule of all for beginners, which is: First get your lawn.—*Somerville Journal.*

WHAT'S in a name? An exhibitor, writes a correspondent, at the last annual show of a provincial Society, divided a sample of peaches, entering one half in his own name, and the other in the name of a gentleman of local prominence. His own half was passed over, but the other sample took the prize proving that there is something in a name after all.—*Hort. Times.*

"I hear that your husband is very ill," said Mrs. Philpot. "Yes, poor fellow," replied Mrs. Snooper, "he leads such a sedimentary life that his health is shattered."

A HEALTHFUL FRUIT.—A lazy dyspeptic was bewailing his own misfortunes, and speaking with a friend on the latter's healthy appearance. "What do you do to make you so strong and healthy?" inquired the dyspeptic. "Live on fruit alone," answered his friend. "What kind of fruit?" "The fruit of industry; and I am never troubled with indigestion."—*People's Health Journal.*

Made in vane—a weather-cock.

"EPRUM, what makes so many cat-tails grow in this here pon'?" "Well, I would say, doan you know? Why dey grows up from kittens that people has drowned in the pon' of course. 'Pears like you wimmen folks doan know nuffin' 'bout agricultshah.—*Am. Garden.*

IT is as difficult to catalogue books as it is to catalogue some other things. A librarian in a Boston library lately confessed that a work on "Greek Roots" was found entered under agriculture, and a book entitled "The Fountain of Life" under water.—*Christian Register.*

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MARIANNA PLUM.

The Canadian Horticulturist.

PUBLISHED AT TORONTO AND GRIMSBY, ONT.
OFFICE ADDRESS—GRIMSBY, ONT.

VOL. X.] SEPTEMBER, 1887. [No. 9.

THE PEACH IN CANADA.

FOR the first time in three or four years peach-growers in Ontario are the happy possessors of a fair crop of peaches. The early varieties, such as Alexanders, Hale's Early, Louise and Rivers are overloaded, while the finer varieties, such as Early Crawford, Old Mixon, &c., are about a half-crop.

But peach-growing in Canada is by no means the important industry that it was five or six years ago. Then every choice piece of garden soil was devoted to peach culture, and every orchardist, along the southern shore of Ontario and the eastern shore of Lake Huron, had golden dreams of the profits to be derived from this delicate fruit. But, alas! the mysterious Yellows awakened us all to the unpleasant reality of great disappointment, and our beautiful peach trees had to be cut off and drawn out of the ground by hundreds. Our growers are now turning their attention to the vineyard in place of the peach orchard; and very few are giving the latter even reasonable cultivation, so wholly disgusted are they with the unsightly remains of what was once the pride of their grounds.

But this is a great mistake. The sagacious orchardist will destroy the affected trees as soon as they are observed, and in the proper time plant young healthy ones in their places. He will not plant more than he can cultivate, prune and fertilize in the best and most approved manner, and thus he will succeed in reaping eventually a most satisfactory reward.

As the time for cultivation of the peach is now over for this season, we

will leave that subject to its proper time, and give our readers a few hints concerning the

PACKING FOR MARKET.

The experience of our growers this year will teach the lesson that it never pays to gather fruit before it is fit for use, or is in such a state that it will be in prime condition when it reaches the hands of the consumer. Some varieties of early peaches, as the Alexander and Hale's Early color beautifully long before they are fit for use, and, if shipped so, will only serve to disgust the deluded purchaser, and spoil the demand. A little experience will teach a picker just when a peach or a pear has reached full maturity, from its very appearance.

The most attractive package for peaches is the round basket, shown in the engraving. This basket is the one used in New Jersey and in Delaware where the peach is grown in such immense quantities that special peach trains are required to carry them. But it is too valuable a basket to give away with the fruit, and hence the present quarrels and difficulties between shippers and commission houses in the east, the former demanding the return of all empties, and the latter being very remiss in its performance.

As we have already stated on page 152, the twelve-quart gift basket has proved the most generally satisfactory of any we have yet tried; and it solves all difficulties, both with the commission house and with the railway company, concerning the return of empties.

No fruit should be sent away to market without the most

CAREFUL ASSORTING.

We have tried several methods, as, for instance, turning out each basket on a sloping packing table, and culling out as they roll down; or setting a full basket between two empty ones, and placing the first-class in the right-hand basket and the second-class in the left-hand one, and throwing away the culls, thus handling each peach but once. Both these plans are excellent ones, but the latter is best in case of ripe peaches, pears or plums.

The most scrupulous care should be observed in making each package true to its face appearance. The practice of some shippers of hiding all the seconds under a face of first-class fruit cannot be too severely condemned, not only because it brings disrepute upon the shipper, but also because it is downright dishonesty.

A few bunches of peach leaves may be used to dress up the top of choice samples, and will serve to set off the fruit to good advantage.

THE MARIANNA PLUM.

Our readers will frequently meet with references to the Chickasaw plums, particularly to such varieties as the Miner, Wild Goose, Robinson, Marianna and others. It may be interesting to know that the general name is given to a type of American plums found

growing wild in the southern parts of the United States, and is derived from the Chickasaw Indians. In character the fruit is small to medium in size, nearly round, yellow or red, with thorny bushy branches, and narrow leaves, somewhat resembling peach leaves.

In quality all these plums are far inferior to the European varieties, but where these latter do not succeed well, owing to black knot, curculio, etc., these Chickasaw varieties are worthy of trial.

The Marianna Plum, first noticed in this Journal in vol. vii. p. 33, is a native of South-eastern Texas, and has now been pretty well distributed. It is is found to be about two weeks earlier than the Wild Goose, ripening with the early peaches, and a better producer than that variety. It is claimed to be quite hardy, and a very ornamental tree especially when in bloom, on account of its pure white blossom which is so abundant as to completely hide the foliage.

CULTIVATION OF APPLE ORCHARDS.

NO absolute rule can be laid down with reference to cultivation of the apple orchard, because the circumstances so frequently differ. That a well established orchard, in good rich soil, that is growing thriftily, should be left undisturbed by the plough and whiffletrees, is a position that will need little argument to sustain. So long as the necessary thrift can be kept up with an annual top-dressing of some suitable fertilizer, it would be a positive injury to tear up the roots with the plough.

Neither does it require any argument to prove that all young orchards should receive the best of cultivation for the first ten or fifteen years after planting. The wretched, stunted specimens of trees that have been planted and left uncared for, prove this conclusively.

But what about the many orchards that are full grown, but show no thrift, bear little or no fruit, and whose light or yellowish leaves betray their enfeebled condition. Do they need pruning, manure, cultivation, or all three combined?

Our experience is that cultivation is in such cases the most efficient means of restoration, and will accomplish what pruning and manure will utterly fail in doing without it. Cultivation of the soil so exposes it to the action of the air as to make available the plant food which is already there in store, and besides, has a most important influence in counteracting the serious drouths to which our country is of late so very subject.

One of our orchards which had been planted some twenty-five years, was in the condition above described. It had been left seeded down for about ten years, and had become unthrifty and unfruitful. In the summer of 1886 we broke up thoroughly one-half of it, applied wood ashes and pruned it carefully; while the other half was pruned and manured, but not cultivated. The same treatment was continued during 1887, and now the result is plain enough to the most casual observer. The cultivated portion has resisted the drouth completely. Its dark green foliage is a remarkable contrast to the light sickly green of the other part, and, more important still, the cultivated trees are laden to the very ground with such a load of fine Baldwins, Greenings, and Golden Russets, as cannot be equalled by any other orchard on our fruit farm.

This seems to be clear testimony to the immense advantage of cultivation, especially in seasons of such extended drouth as those of 1886 and 1887.

TRANSPLANTING TREES.

Sir: In the Mail account of your late meeting I noticed a short account of transplanting trees.

Can you kindly oblige me by inform-me how I can obtain full information for transplanting trees in this Province to advantage, its proper season, method, and machinery used?

Can I obtain full details of the discussion of the various topics brought before your Association? Such would be of great interest to me.

W. F. GRANT, Galt.

THE QUESTION of which is the

BEST SEASON

for transplanting trees and shrubs is a much debated one, some claiming that fall planting is most suecessful, and others advocating the advantages of spring planting. The nurseryman would naturally prefer to make as heavy sales as possible in the fall, that he might be eased a little of the great rush of spring orders, and the unscrupulous tree agent, at this season, will assure intending planters that the fall is the only right time, just as earnestly as he a little time ago advocated the season of spring.

The fact is tnat we in Canada live a little too far north to succeed in fall planting without the greatest care. Farther south, where the winters are milder, it is much the preferable season. There is more leisure for the work, a better selection of trees can be had from the nursery, the roots will become callused during the winter, and the trees well established in their places in good time to make the best of the growing season. But here, where the winter often begins iu November and the thermometer often touches 30° or 40° below zero, fall planting is, to say the least, risky. If a hardy tree or shrub is moved about the time of the fall of the leaf, and fine earth packed well about its fibrous roots, it will probably do well in Southern Ontario, if planted in dry soil; but, even here, the more tender sorts will certainly suffer badly, and perhaps be killed outright if planted at that time.

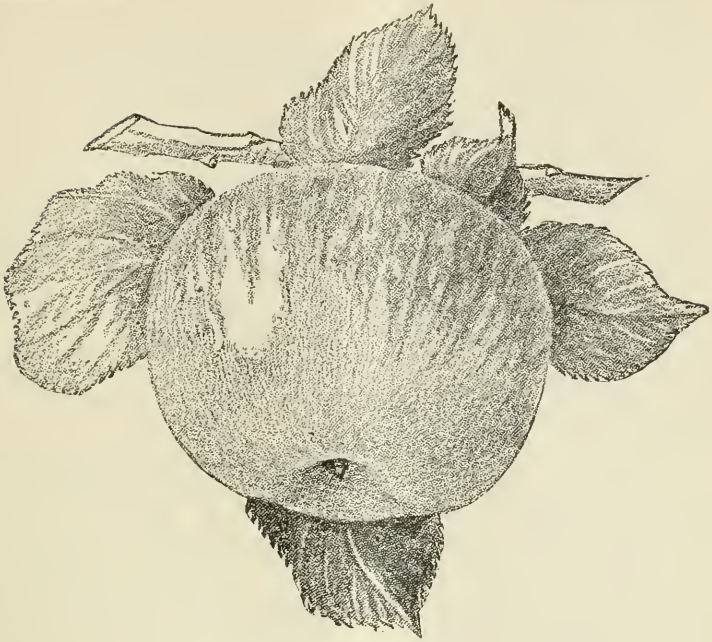
We speak from experience. On one occasion the writer planted at Grimsby, an orchard of Hale's Early peaches in the fall in the most favourable situation; they did not leaf out at all until the following July, and then made but a poor sickly growth. He planted a hundred Duchess dwarf pear trees once in the fall, in soil that had fairly good natural drainage, and only about twenty survived the winter; though in justice to the subject we must add that a hundred planted on high and dry sand came through all right. On another occasion he planted an orchard of Northern Spy apple trees early in the fall in well-prepared soil. The season was very dry after planting, and though put in most carefully, being removed directly from the nursery rows to the orchard ground, they leafed out very slowly the following spring, and did not make as good growth as spring-planted trees.

As to season, therefore, we advise the spring as the safest and best, except in exceptional cases.

The

MODE OF TRANSPLANTING

is simple, and yet a few points need to be impressed upon the mind of the amateur. In the first place the ground must be thoroughly pulverized and enriched. This can be best done by growing a root crop upon it the year previous. It must always be borne in mind that trees are living organisms that want room for growth under ground as well as skyward. One of our neighbours planted a pear orchard in a tough pasture field without any previous breaking up of the soil. He planted



THE RED BIETIGHEIMER.

them as a navvy would plant a post, in a hole just large enough to receive the roots by ingenious twisting. The stock was fine, but no doubt the nurseryman gets the blame for the dry stunted sticks which now disgrace his field, in lieu of an orchard.

If it is not convenient to break up the whole surface of the ground to be planted, the sod should be first removed from a space of ground at least three feet in diameter, and the soil beneath well spaded over to a depth of eighteen inches. The tree may be then planted, taking care to plant it little, if any, deeper than it stood in the nursery, and to pack fine earth tightly about the roots. The hole is to be next filled up with loose soil, and a good thick mulch applied to the surface.

As to machinery nothing is needed except a good sharp spade, unless in case of very large trees, in which case special machinery is needed.

Our correspondent may obtain full verbatim reports of the discussions at our meetings by becoming a member of our Association.

POMOLOGICAL.

THE KESWICK CODLIN

is a noted old English cooking apple, which is well worthy of a place in the orchard, as an apple for home use. The writer has two trees of this variety, about seventy-five years of age, which bear enormous crops every alternate year, and the quality for cooking cannot be surpassed. The skin is a light, greenish yellow, and the flesh white and juicy. It is ready for use about the first week in August.

For market purposes it is now surpassed by the Duchess of Oldenburg and the Red Astracan, on account of their unequalled beauty of appearance, but for pies for our own home, give us the Keswick Codlin. Any one who

takes one help of a pie made from this apple, will undoubtedly come back for a second one.

THE RED BIETIGHEIMER

is a new variety of German origin, and claimed to be so large and beautiful, and withal of such excellent quality, that it brings the highest prices everywhere, and it is worthy of the most extensive cultivation. The engraving shows this apple drawn at one-quarter its natural size. Its color is cream-ground, shaded with purplish crimson; its flesh is white, firm, sub-acid, with a brisk, pleasant flavor. The tree is a free grower and an abundant bearer. The time of ripening is in September.

PRUNUS SIMOMI.

This fruit is ripening a full crop on the Rural grounds and does not receive any commendation from Mr. Carman. He says the skin is bitter, and it is not worthy of cultivation in the vicinity of New York. It has a corrugated pit, and a peach flavor.

SMALL FRUIT NOTES.

THE CAROLINE.

This berry has proved on our grounds a magnificent bearer, better even than the Cuthbert, or any other raspberry we have. It lacks, however, the rich flavor of the Brinckles Orange, and is inferior in quality and in size to the Golden Queen.

THE EARLY HARVEST.

According to Mr. Carman, this blackberry has done exceedingly well on the Rural grounds this season. The bushes were half covered with beautiful glossy berries, which were black and ripe before *any other varieties* had even turned red. Our specimens have not very much prepossessed us in its favor as a profitable market berry. It is a weak, slender grower, and yields only a moderate crop of fruit. But perhaps the different results are due to different conditions. Ours are planted on a rather light, sandy knoll.

LUCRETIA DEWBERRY.

Another season has added its testimony to that heretofore accumulated in proof of the Lucretia's great value. This berry is beyond all doubt the best of all dewberries in cultivation. As early, if not earlier, as the Early Harvest; as large, if not larger, as Erie; sweeter and more luscious than either, extremely prolific and perfectly hardy, we fail to see why it should not make hosts of friends.—*Orchard and Garden.*

THE WEATHER AND CROPS IN STORMONT.

BY JOHN CROIL, AULTSVILLE, ONT.

WEDNESDAY morning, 22nd June, we started in the good steamer "Cuba," and on Friday morning were landed at the house of our esteemed friend, D. W. Beadle, in

ST. CATHARINES.

The best part of two days we spent there, dividing our time between him and Mr. A. M. Smith, and their amiable families. No man need go to these parts unless he makes up his mind to be loaded with kindness.

Just a word about the place. Well may it be called the garden of Ontario. Our first impression of it was that it was all garden. We visited the nursery grounds of Mr. Dunlop, Mr. Beadle's late partner. He evidently is up to his business, vegetables of all kinds were grown in profusion and well cared for. Last year off 4½ acres tomatoes he realized $500, selling the early crop in the market at good prices, the balance to the canning establishment at 25 cents a bushel. This year he has seven acres. Upwards of two acres of onions looked splendidly. I saw him start for Hamilton with a load of 800

EARLY CABBAGE,

for which he said he would get $80. These were planted in the fall and wintered in frames. He told me he had frequently returned with $100 for his waggon load.

Mr. Smith drove me to his grounds. More grape vines I saw that day than I have in my life time, enough it seems to me to stock Ontario. What friend Smith doesn't know about grape vine growing isn't worth knowing. I took leave of my kind friends in St. Catharines Saturday afternoon for

GRIMSBY,

where I was met by friend Woolverton. We had just time before night to climb the hill above the town, from which we had a magnificent view of that garden land. We reached his home in time for tea, to which we did ample justice. In the evening we went over his well kept grounds. It surprised us here and at St. Catharines to see a full crop of fine cherries. Here at Aultsville, and to a distance far on each side of us, we have healthy looking trees, but have not had a cherry for many years. The reason why we can't tell. Notable at Grimsby are its trees. No where have we ever seen finer specimens of forest and fruit trees. We measured one apple tree in Mr. Woolverton's yard, and found its trunk to be seven feet eight inches in circumference, the height of the tree about thirty feet, and the branches to cover a space of ground fifty feet in diameter! Beat that who can. Mr. Woolverton tells us there had been gathered once from one tree, 20 bbls. of apples! Very few of such trees would be more profitable than wheat at 50 bush. to the acre. As our custom is, we drove with our friends on Sabbath morning to Church —the Presbyterian in the morning, and the Baptist in the evening, and good, sound gospel we heard in both places. Leaving, with regret, our kind friends in Grimsby on Monday morning, we visited Hamilton and Toronto, and started for our Collingwood meeting, of which there is a good report, not exaggerated, in the last number of the *Horticulturist.*

On arriving home, 2nd July, we found hay cutting just commenced, and the strawberry season half-over. Up to this time we had weather favorable to the crops, but soon after, a time of excessive heat and

DRY WEATHER

set in, which has been very damaging to the crops. In the last five weeks, when the thermometer has most of the time stood about 90, we have only had rain twice, which, falling on the ground as dry as ashes, was hardly felt.

Grapes and weeds alone seem to have thriven, even the late kinds of the former will be likely to mature. In spite of the weather, we have had weeds in abundance, and of purslane especially, as luxurious a crop as ground ever grew. A writer in the Montreal *Star* says, that twenty years ago the seed of this weed came to Canada in a packet of seeds from a celebrated seedsman, and adds: It is just so with evil influences; they are scattered with careless hand, and no one feels accountable for the result, but the harvest is often sad indeed. Peace to the seedsman's ashes. We hope he has sowed better seeds for the world to come. On him this one has not lost a benefactor.

The strawberry crop — where the plants were not winter killed, and many were — was good. Our Wilson's Albany was badly rusted and the fruit worthless; other kinds growing side by side were all right. Of raspberries we can grow here but the hardiest kinds; we have mostly the Reliance, which needs no winter protection. The Cuthbert and Marlboro' have stood the last two severe winters

without covering. The latter, a fine berry, seems to be a shy bearer.

Our tomatoes are all rotting on the crown as they ripen, although not touching the ground.

Our apple crop is very light, not one in ten trees bearing any fruit. Very little

APPLE SPOT,

but enough to show the disease, is there. In regard to the hyposulphite of soda, it was a bad year for experiments, there being so little spot, but twenty trees I sprayed with it three times, at the time recommended, were as much spotted as those not so treated. All our apples are badly worm eaten—*a substitute, I suppose, for the Black Spot*—the St. Lawrence most of all; the Fameuse seemingly the least. I did not spray any of my trees with Paris Green, and would like to hear how it fared with those who did.

Aultsville, Aug. 6, 1887.

GRAPES AND MILDEW.

BY G. GOTT, ARKONA, ONT.

Downy Mildew and other Fungi—their treatment, &c.

MR. EDITOR,—I was exceeding well pleased by the able and almost timely paper of Mr. Beadle, of St. Catharines, on the above subject, in your late excellent August issue of the *Canadian Horticulturist*, page 170. With your kind permission, I would like to add a little of our practical experience and observation to what that gentleman has said, not so much, however, by way of improvement as by way of enlargement. As Mr. Beadle has very pithily remarked in his paper, the path of *prevention* is alone the path of *safety* in dealing with these subtile parasites of the grape. After they have once established a foothold, it is almost in vain to attempt to treat them to effect a cure. Nor is this an isolated fact, as it is found to be almost exactly so in the respect to many personal evils and evils that affect society. *Prevention is better than cure.*

OUR PRACTICE IN THE MATTER.

Firstly we commence the season with the firm belief that trouble in the way of fungus growth in our grapes will most surely come, and so we govern ourselves accordingly. To be *forewarned* is to be *forearmed*, you know. As early as we get our grapevines up on the trellises, and active growth has commenced in earnest, and the young canes push out rapidly, we order on some fifty or one hundred lbs. of

FLOUR OF SULPHUR,

according to the size and quantity of our vines. As the young bunches begin to appear, the blossoms open and the calyx falls, the berry forms and shows its proportion; then, at this stage of proceedings, we take our pulverized sulphur and apply it liberally, at about the rate of twenty-five pounds per one hundred of large vines. We do so early in the stillness of the beautiful dewy summer morning. When the sun is fully up in brightness, and shines in his intensity, our sulphur is slowly but surely converted into

SULPHURIC ACID GAS,

that can be easily detected by our senses in the vineyard, and is a deadly antagonist to every form of fungoid spores floating in the air, and at that very moment ready to settle and grow on the grape leaf and fruit. We apply by means of the hand, throwing the sulphur up and in amongst the leaves and fruit, where it will readily adhere to the still dewy leaves, some falling to the ground, where it yet does good service for us. After about two or three weeks of bright weather, we make another application, and the work is done for the season, for our grapes are sufficiently hardened to be beyond

the attacks of fungus, and the bunches are safe. This remedy is of easy application, and it is perfectly

SAFE FROM POISONING

either our fruit or ourselves. Although at one time we had much trouble from the various forms of fungus on the leaf and in the fruit, yet since our present practice they have almost entirely disappeared, to our great satisfaction.

Now, with respect to

THE SURPLUS LEAVES AND BRANCHES,

and their destruction, I would rather advise to leave them lying where they fall. Early in the season, after the vines are put up on the trellises from their winter quarters, we start the one horse orchard plow in the vineyard, and cover all, both leaves and branches, securely up, to decompose quietly in the soil, and help our future crops. We find great benefit from this practice in the future quality of our vines and the future beautiful perfect fruit. This method is far preferable to the wasteful practice of burning the refuse, and pays us, we think, much better. I may say, too, as you all know that this country is a very poor locality to practice waste of any kind, it rather effectually makes us economical and

SAVING OF EVERY MATERIAL

that may be useful to our farms or to our gardens or orchards or vineyards. Although these above remarks on this subject may be now altogether too late for practical value this season, and I am very sorry for this, yet they may possibly be of some service to some young vineyardist in the seasons which are to come. I would just say in closing that our prospects for a large and handsome showing of the finest grapes ever seen, were never better, and could not be desired better in all sorts and colours.

Arkona, Aug. 10, 1887.

STRAWBERRY NOTES FOR 1887.

BY P. M. AUGUR, CONNECTICUT STATE POMOLOGIST.

THE strawberry season has been a very peculiar one. In this locality the month of May showed a rainfall of only .22 inch, which is less than in twenty-nine years before. Hence the crop was considerably lighter than was expected, although better than we feared. Our

LEADING VARIETY

is the Jewell, and each year's experience adds to our faith in it as the very best for our market. Weddings, festivals and all public feasts call for the Jewell. Our dealers crowds other good varieties into second grade. Its strong points are large average size, a perfect lustrous crimson color, good quality, and unequalled productiveness; but, being pistillate, every third, forth or fifth row should be some bi-sexual variety, such as Sharpless, Ontario or Belmont, etc. Yet the pistillate varieties, as a rule, exceed the bi-sexual in productiveness, and in raising seedlings we choose seed from pistillate varieties as the mother plants. As we grow plants for market we have a long list of varieties, which we make shorter year by year, and the list is now twice too long.

The *Wilson*, the grand old Wilson, is, by us, believed to be superannuated; the fruit runs too small after the first picking. *Charles Downing* is still fairly good when it does not rust, and for a medium-sized berry answers.

Crescent and *Ironclad* are early but too small.

Gipsy is also early and of excellent quality, but not sufficiently productive as a market berry.

Miner is good, but displaced by the Jewell where beauty, size and carrying qualities are desired.

The *Belmont* is a choice variety and attracts considerable attention. It is later than Jewell, longer in form, is bi-sexual, slightly better in quality, but not as attractive in form or color and

very much below in productiveness. It is superior, however, in producing plants, as the Jewell is rather slow in multiplying.

The *Ontario* is a berry of large size, exceeding the Sharpless in this respect, which it closely resembles. It has the habit of the green tip, like the Sharpless; pickers and purchasers all prefer the Jewell, as it always colors all over at once.

The *Cumberland* is with us a beautiful berry always, but it is too light in color, rather soft, and not sufficiently productive.

The *Buback No. 5* is an acquisition. It is of good color, fairly productive, and in color and size can be crated with the Jewell without much fault; it is pistillate also. We regard the Buback as one of our most promising new varieties.

Henderson is of superb quality, but does not take well in market on account of inferior color and size; neither is it productive enough. In regard to cul

ture we consider the narrow the best. Perhaps what might be called the triple row would be chosen by many. The plants a, a, a, a, are set in spring; b, b, b, b, are

```
    *   b   *   b   *   b   *   b
*   a   *   a   *   a   *   a
    *   b   *   b   *   b   *   b
```

young plants, two to each old plant, rooted in midsummer and then all runners cut off afterwards.

The real yield of Jewell strawberry plants treated as per diagram, is incredible, and the size and beauty are amazing as the yield. Let anyone in doubt take a piece of land in good culture for two years and try the experiment himself.—*The American Garden.*

ENGLISH GOOSEBERRIES IN CANADA.

We have to-day (August 4) received from Mr. A. Morton, Brampton, a box of sample gooseberries, together is with the following letter:—

SIR: I have to-day sent you per parcel post a small box containing a specimen of twelve English gooseberries grown by me, and three of a seedling which I have labelled Morton's seedling. With the exception of Industry I have never met with or heard of their being grown in Canada. Will you please give me your opinion of these varieties? I am sorry that absence from home has prevented my sending them sooner, as they are rather too ripe, andthe best and largest specimens have dropped.

Yours truly,

A. MORTON,

Brampton, Aug. 2, 1887.

The following is a list of the varieties sent us, with measurements of diameters:—

Red.

1. Industry, - size, $1\frac{1}{4} \times \frac{3}{4}$ inches.
2. Lancashire Lad., " $1\frac{1}{3} \times 1$ "
3. Dan's Mistake, " $1\frac{1}{8} \times 1$ "

Yellow.

4. Shiner, - - size, $1\frac{1}{4} \times 1\frac{1}{8}$ "
5. Champagne, - " $1\frac{5}{8} \times 1$ "
6. Princess Royal, " $1\frac{1}{2} \times 1$ "
7. Leveller, - " $1\frac{1}{4} \times 1$ "
8. Gipsy Queen, - " $1 \times \frac{7}{8}$ "
9. Catharina, - " $1\frac{1}{2} \times 1$ "
10. Morton's Seedling, " $\frac{7}{8} \times \frac{3}{4}$ "

Green.

11. Jolly Angler, - size, $1\frac{1}{4} \times 1$ "
12. Duster, - " $1\frac{1}{4} \times 1$ "

All these samples are free from mildew, and appear to be most desirable kinds. Certainly in size and quality we have not seen them surpassed.

Gooseberry culture is carried on quite extensively in the congenial climate of England, and hundreds of varieties are grown; many of them, however, having very few points by which they may be distinguished from others. But in Canada scarcely any of these English sorts have been found to succeed on account of the prevalence of mildew.

It was a great boon when some American seedlings were found which would resist this fungus, and the *Houghton's Seedling*, a small red sort, but very productive, was for a time almost the only kind generally grown.

The *Downing*, a seedling of the Houghton, raised by Chas. Downing, at Newburgh, on the Hudson, is much finer in size but not so good in quality as *Smith's Seedling*, grown from the same parent, by Dr. Smith, of Vermont.

All things considered, this last is probably the best green gooseberry for Canadian market gardens. Of the varieties mentioned in Mr. Morton's list we know of none except the Industry, which is being tested elsegenerally in Canada. Probably the latter is the most desirable red variety which we can cultivate, and we shall be pleased if this article brings out from our correspondents the general opinion

of its merits. If Nos. 2 and 3 in the above list are as productive, and as little subject to mildew as the Industry, we see little to choose between them and it, except in point of size.

Morton's Seedling is excellent in quality, with a smooth, thin skin. It is small when compared with the others, but if as a Canadian seedling it should prove both productive and mildew proof its size will not hinder its popularity.

The *Conn* and the *Ottawa* are also Canadian seedlings, and we have some plants, received from Mr. P. E. Bucke, of Ottawa, which we are testing, upon which we will report at some future time.

FAY'S PROLIFIC CURRANT.—SIR: You will be glad to learn that I have been very successful with all the premiums I have received from the Society. The "Fay's Prolific," received in 1885, has fruited well this year; it is just splendid. I intend to discard all my old stock and propagate from it only. The "Canada Victor" grape received last spring is doing remarkably well, and will bear fruit next year. And the "Niagara," received this year, is all I can wish, and I hope it will continue to deserve my good opinion of it. I am yours very truly,

J. L THOMPSON, Toronto.

BARK LOUSE.—SIR: I have no doubt that your article on the Bark Louse in the June nnmber of *The Canadian Horticulturist*, very correctly described the condition of my apple trees, for on my looking over them to-day I find matters very different from what I had anticipated. About one-half of them are badly infested with these insects, and, as I suppose, the present will not be an opportune time for applying the alkaline solution, I will have to wait till spring for it.

J. L. T., Toronto.

PRINTED RECIPES IN GRAPE BASKETS.—SIR: I happened to hear from one or two growers that it is their intention to put printed recipes in their grape baskets, to educate people as to their use. I think it will be wise to do so; but I think it will be well to have them printed in French and English for Montreal, as it it the French-Canadian population that most require to be instructed and encouraged to use fruit.

Yours, &c.,
JOSEPH BROWN.

Montreal, Aug. 3, 1887.

Apple Reports.

FROM LIVERPOOL.

SIR,—As the season is drawing nigh for shipping apples, we take this opportunity of letting you know the position of our crop, and the prospects for American apples during the coming fall and winter.

More than usual interest attaches to our fruit crop this season, as both the winter and summer weather has been quite unusual for this country. A long cold winter and bleak stormy spring, which lasted until the end of May, brought us most precipitately into almost a tropical summer, and June, July, and up to time of writing have been a succession of warm sunshiny days, with hardly a drop of rain, and fears were entertained that the apple crop might be a total failure, but from very detailed reports from the forty counties in England we find the crop as follows:—

Average crop..	22	Counties.
Under average crop ..	13	"
Over " " ..	5	"
	40	

In many sections the fruit is reported to be dropping fast, so that we do not consider the American supplies will suffer from the quantity of apples

produced in this country, which are always small and inferior, and never materially interfere with choice fruit of American growth.

Last season American apples arrived early in August, and after the first arrival or two, prices for fall fruit such as Orange Pippins, Summer Pips, Fall Pippins, Gravensteins, &c., fell very low; this was partly owing to the enormous crop of damsons, plums, and other varieties of stone fruit. This season the crop is considerably below the average, and that competition will be avoided.

The prospects for American apples we therefore consider very fair, that is for bright, sound clear fruit—such as Kings, Baldwins, Greenings, Spitz, Spies, Cranberry Pips, Maiden Blush, Strawberry Pips, Canada Reds, Romanites, &c.; but we strongly condemn the shipment of summer apples, which during the past few years have come in large quantities at the commencement of the season, and invariably sell at quite a heavy loss; such fruit can always be sold to better advantage in home markets. It will not stand the voyage, lands here wasty, comes into the market when the bulk of the home growth is offering, and is always disastrous to shippers.

Yours truly,

GREEN & WHINERAY.

Liverpool, Aug. 5, 1887.

FROM LONDON, ENG.

SIR,—From enquiries made in the principal apple-growing districts in England, we gather that the crop this year will be undoubtedly very short, and in some places a total failure.

Fair prices may therefore be expected, provided shippers take great care that the fruit is properly selected and well packed. Only the choicest kinds of even size and free from spots should be sent, and they should be pressed tightly into the barrels so as to prevent shaking and to secure their sound condition on arrival. This is very important.

By attending carefully to these details shippers will realize the benefit of the top prices of the market.

The kinds we specially recommend for shipping are—Baldwin, Greening, Ben Davis, Pearmain, Ribston, Twenty Ounce Pippin, Rox Russett, Golden Russett, etc.,—and should you have any early fruit, such as Gravensteins, we also recommend a shipment of these as likely to do well.

Yours faithfully,

PITT BROS. & CO.

Grocers' Hall Court, London, E.C.

FRUIT IN THE UNITED STATES.

The fruit crop is very poor. There will be few apples outside of New England and New York. There will be a partial crop in Michigan. In the Ohio river States the harvest will be nearly a failure.—*Dept. of Agriculture.*

Judge Miller, of Missouri, mourns the loss of his grapes by rot this year. He was not at home when the grapes should have been sacked, or the copperas remedy applied, and when he returned the rot was so far advanced that the fruit could not be saved. Therefore, he reminds us that these preventive means must be used in season or it is no use to attempt a cure.—*Michigan Farmer.*

Fay's Currant.—Mr. Fowlie, who is one of our chief horticulturists, has shewn us some bunches of Fay's Prolific red currant obtained from the Fruit Growers' Association, and now bearing for the first time. They are really magnificent—larger and sweeter than the much praised cherry, and with longer bunches. Mr. Fowlie informs us that berries are earlier this year than usual, and that he anticipates having some grapes colouring very soon.—*Orillia Packet.*

Flowers.

THE COCKSCOMB.

F. MITCHELL, INNERKIP, ONT.

I HAVE at the present time—this very dry summer—a large bed of Cockscombs (*Celosia Cristata*) and it presents quite an oasis of brilliant, fresh display, in the midst of my drought-burned garden. And, as we naturally esteem highly those friends who stand by us when friends are the fewest, I make this my excuse for calling attention to the Cockscomb just now. I know that I cannot claim a delicate or a refined beauty for the Cockscomb, but it is very showy and striking in its appearance, whether planted in beds, or as isolated specimens. One strong point, in favour of this plant, is its ability to pass scatheless through such a serious drought as the one we have been experiencing lately. Another commendable point is that, as soon as it has formed its flower-heads, it will commence, and continue to make an uninterrupted (though increasing) display until destroyed by frost. The heads or "combs" will sometimes measure sixteen inches across, and are of a number of different shades of color—greenish-white, yellow, orange, all shades of crimson, and many intermediate shades between all of these. The only secret in growing these plants to perfection is, to keep them as much as possible in the open air during the early stages of growth, to promote a stocky form, and at the same time give plenty of bottom heat to produce a strong, healthy growth. After the combs have commenced to form, they can, if desired, be removed to the conservatory.

August 8th, 1887.

Styrax Japonica.—SIR: In looking over the April number, we were very much interested in an article on page 94, about Styrax Japonica. Although we have never flowered it ourselves, it may be of interest to you to know that there are others who appreciate its beauty as well as your correspondent. In a letter to us, a customer of ours says: "I do not notice it (Styrax Japonica) in your catalogue; I want it particularly if I can get it. I think it the most admired shrub or tree I have." We have been growing it for several years, but unfortunately it was left off our catalogue by mistake.

Very truly yours,
THOS. MEEHAN & SON.
Germantown, Penn.

CULTIVATION OF THE NARCISSUS.

BY H. SIMMERS, TORONTO, ONT.

THE NAME Narcissus originated from a Greek fable. He was supposed to be the son of the river god Cephissus, and of the nymph Liriope, of the town of Thespiæ, in Bœotia. He was a youth of extraordinary beauty, of which he was excessively vain; and for this he was punished by Nemesis, by being made to fall in love with himself on seeing the reflection of his own face in a fountain. He died of this love-sickness; and on the place where he died sprung up the flower which bears his name. The foregoing will give the reader a faint idea of the origin of the name Narcissus.

Of late years the Narcissi have been very extensively hybridized, and I will write about some of the commoner kinds. Unlike many other genera of bulbs, they propagate very easily. In a few years, from one bulb, a dozen or more bulbs may be separated; for instance, in the *Narcissus Poeticus*, or poet's Narcissus, propagation is so very rapid that in the course of perhaps three years, such a number of bulbs will be

attached to the main bulb as to cause anxiety on the part of the amateur as to why they do not flower. This is altogether on account of the numerous bulblets, and may be easily remedied by taking the bulbs up and separating the larger bulbs, planting them where they are required to flower, the smaller bulbs to be planted in another portion of the garden, where they should remain until large enough to bloom. The *Narcissus Poeticus* is, perhaps, the only variety that propagates so very rapidly. The other varieties are not quite so free. Narcissus Van Sion, or Yellow Daffodil, is also commonly known as the Daffy-down-dilly. There are two varieties of them, double and single, the single variety not so much grown as the flower, though as fragrant, does not remain in bloom as long, and hence is not so well adapted for general use; the double, on the contrary, possesses so many greater advantages that it is always seen in our own gardens, and the beautiful yellow bloom coming at a season of the year when flowers in the open air are so scarce, makes it a flower to be recognized by all lovers of bulbous roots. Of late years the *Double Narcissus Van Sion* has been extensively grown by florists, tending to make it suitable for forcing, but I would not recommend this kind for any person not having the advantage of bottom, because as soon as they are brought to the light, they should be placed on bottom heat, otherwise it will take an indefinite period to flower them in the ordinary way for house culture. I might add they are treated in the same way as Hyacinths are, when required to be grown for the conservatory. *Narcissns albus plenus odoratus*, or Double Poeticus, a variety exceedingly handsome, but suitable only for open air culture, should be treated similar to that of the other varieties. *Narcissus, Orange Phœnix*, commonly known as "Butter and Eggs," is a very beautiful double variety, suitable only for open air culture. Other varieties I will speak about in next issue of the HORTICULTURIST.

TORONTO FLOWER SHOW.

B. LAWSON, TORONTO.

VISITORS to the Queen city, from the rural districts, as well as those from cities in the United States, frequently comment on the absence of floral decorations about the houses of the wealthy residents. This need no longer be a matter for surprise, after witnessing the poor display made by the Toronto Horticultural society on the 20th and 21st July. The competitors were few in number, indeed had three names been left out, there would scarcely have been a competition. It may safely be said that Sir D. Macpherson, Collier Bros., and Mr. Paxton made the exhibition. This was from no fault of the directors, as far as the prize list was concerned, but must be attributed to the apathy of the residents of Toronto and neighborhood, who evidently are not great lovers of flowers, and sadly want a James Vick, to settle among and educate them to love the beautiful flowers.

Of foliage plants there decidedly was the best display, especially in the Begonia classes. Coleuses were fairly well represented, but we did not notice anything new. Geraniums were good, and one or two new varieties were exhibited, but there was nothing very striking. Of Lilies a good show might have been expected, especially when we take into consideration their popularity and number of varieties. Only two pots of well grown Lilium Auratum represented the Lily. A single pot of Amaryllis stood forth in all its glory. The Rose, the Queen of Flowers, was conspicuous by its absence, with the exception of a few cut blooms, and those were nothing to boast of. There was a nice display of cut

flowers, but not what might have been expected from a city of the dimensions of Toronto, with its wealth and luxury. A fine Palm, raised on a platform, spread its branches over a considerable portion of the centre of the pavilion. The conservatory portion of the building was empty, if we may except a few miserable looking plants in pots, placed around to hide the nakedness of the place.

The exhibit of fruit would not have been worthy of a township exhibition, and this in the height of the fruit season; just a few small plates containing fairly good specimens of the different varieties, sufficient in number to rake in the prizes.

At the meeting of the Ontario Fruit Growers' Ass'n., recently held in Collingwood, great stress was laid upon the fact that the show of fruit, at the Intercolonial Exhibition, was so grand that the people of the old country could scarcely believe Canada was able to produce such fruits. If any travellers passing through Toronto witnessed the meagre display made by the Horticultural society, they would certainly not receive a very favorable impression.

The Horticultural Society sadly wants waking up. New blood will have to be infused into it. There is too much "old fogyism" connected with it.

Scientific.

A LEAF MINER AT THE BEET LEAVES.

J. Pettit, Entomologist, says he has found a leaf miner at work in a garden near Grimsby upon the beet leaves. Noticing the peculiar blotched appearance of the leaves he had observed them carefully, and discovered a small fly near the edge of one. Having captured the fly with the leaf, he observed that the fly had just deposited a couple of minute eggs, more of which were found upon further investigation. In process of time the larvæ of these flies issued from the eggs and entering the parenchyma, or substance of the leaf between the upper and under skin, began mining away good sized patches of it.

One peculiarity was that instead of each larva making for himself a new path, all would enter by the opening made by the leader, and then they would diverge.

Mr. Pettit says he further observed that a beetle of the genus Carabidae, a Bembidium, preyed upon the larva of this fly, and may perhaps so keep it in check as to prevent any great damage.

According to Mr. D. W. Beadle, of St. Catharines, the English Sparrow has also been seen pecking out the larvæ of this leaf miner from the beet leaves.

Open Letters.

FALL vs. SPRING PLANTING.

SIR: Now that the nursery agent is about, pressing for fall orders, a few remarks on the purchase of fruit trees in the fall might not be out of season. Many reliable nurserymen, with apparent sincerity, strongly recommend the purchase of fruit trees in the fall in preference to the spring time. My experience has led me to advocate the very opposite practice. For example, during the past five or six years I have planted on my half acre lot twenty-six pear trees. Out of the lot I have but two fall purchased trees growing, and have only lost one or two that were purchased in the spring. The fall stock was "heeled in" up to the branches, and allowed to remain till the spring was well opened. They were then taken out, flushed with sap, with buds full to bursting, and planted. In a few days the buds had opened, and, to all

appearances, were rushing into a vigorous growth; but in two or three weeks the growth had stopped, the bark looked dry and sometimes shrivelled, and no amount of treatment during the summer could renew the vigor or encourage the growth.

Trees purchased in the spring show very little sign of growing for one or two weeks after planting, but when they do start they continue to grow throughout the season, and establish themselves sufficiently to bear the frosts of the following winter.

Now, this is my experience, as briefly as I can state it, with pear trees, and if any of the readers of your really excellent and highly valued journal, has had a different experience I would like to hear it. Respectfully,

T. H. RACE.

Mitchell, July 18, 1887.

NOTE.—See article on Transplanting Trees, p. 196.

THE LUCRETIA DEWBERRY.

SIR,—I beg to report that my Lucretia Dewberry has stood the winter well, having been slightly covered, and bore some 18 or 20 berries about the size of my blackberries, but more tart in flavour; and it has made good shoots for next year. G. WILGRESS, Cobourg.

SIR: The Lucretia Dewberry came through last winter all right, this summer it has made a growth of three feet or over, but I have had no fruit yet. Would you please give directions in the *Horticulturi t* for planting and caring for the bulbs you send out this fall?

S. REESOR, Cedar Grove.

SIR: With me this plant is doing remarkably well. It has grown seven feet and it had just a few berries which were of good size and delicious flavor.

EDWIN C. BARTLEY.

Walnut Hill, Ont.

Uses of Fruits.

Next in importance to the best modes of cultivation and the selection of the choicest varieties, comes the most approved methods of preparing fruits for use. We would be glad therefore if the ladies, who read this Journal, would make free use of this column for an interchange of ideas on this subject.

FRUIT vs. PILLS.

WHY should the American farmer live all the year on salt pork and fried potatoes? One of the earliest recollections of my life is the longing I had to get into a city once in a while. so that I could get all the strawberries I could eat. The average boy lives a great deal in his stomach. He has a hearty, unquestioning appetite, and in the spring and summer he eats without hesitation anything that is green. It is an instinct of his nature. He needs the fruit for its juices, and the right way to keep him from green stuff is to give him plenty of good, ripe fruit. In my boyhood on the farm, as above intimated, I thought strawberries, raspberries, grapes and peaches (with cream) were for city people, while an occasional mess of stewed currants, a few blackberries gathered after haying and harvest were over (no time before), and a small basket of apples, clubbed off the trees, and contended for with the pigs that stood waiting and watching were for farmers. Who can blame the boy, with a natural, healthy appetite, if he get tired munching this same old stuff—pork, pickles, biscuits and poattoes — and rebels against the farm?—*Ohio Farmer.*

FRUIT FOR BREAKFAST.

LEIGH HUNT, who was a mild epicure in his way, protested against other food for breakfast than toast, ham, tea or coffee, eggs, and always something potted In our climate it may be added, and always, fruit the year round. For breakfast eat fruit. The earth and skies share its life. Its flesh, filled with

sunshine, needs no human basting. Its veins are sweet with fragrant dew formed into life by soft sighing winds. The ardent kisses of the summer sun paints the blushing cheek of the velvety peach, and fills with wine the purple grapes ensphered in purple luxuriance that drop through the leafy roof of trellised arches. Such a breakfast is patriarchal. It has a flavor of Arcadian days and the mythological age of a dead past.—*Ex.*

FRUITS FOR STOCK.

When some of my pear trees littered the ground with their ripe mellow fruit, I fed them to my cows. A peck of pears with two quarts of meal and bran for a noonday feed, increased the milk and butter fully one fourth, and when the apples were ripe and only 50 cents a bushel could be got for them in the market, the horses, cows, pigs and fowls had all they wanted and the ripe fruit did them a good deal of good. Some farmers give the wind-falls—wormy, hard, gnarled fruit—to their animals and complain that they are unwholesome. And why not? Are they wholesome for themselves? Do they not suffer the pains and penalties of eating hard unripe apples? Why should they expect their stock to escape similar consequences? Give only ripe sound fruit to the animals, they will be greatly benefited by it.—*H. S. in Orchard and Garden.*

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.

The Annual Report and Premiums were sent out to all those who had paid their subscriptions before 1st May, 1887. If any who paid previous to that date have failed to receive it, will they please notify the Secretary by post card. The Report of the Entomological Society is now being sent out to all those who were marked

Paid '87 on the 1st of August last. Those who have paid since May 1st, when our Report for 86 was distributed, may have a copy of the valuable Report of 1874 as a substitute by sending the Secretary a post card to that effect.

No Premium.—If any member who paid previous to April 87, failed to receive the tree or plant chosen, would he please notify the Secretary.

Immature Peaches.—The Toronto *Globe* says: "The early peach does not taste materially different from a raw squash. But the early peach brings wealth all the same." This is a comment upon growers who will insist on picking Alexanders and Hales' Earlys as soon

as they color, and long before they are ripe, or get their proper flavor. Such work deserves the remark quoted, but a well ripened Alexander or Early Purple is certainly a delicious morsel for dessert, notwithstanding.

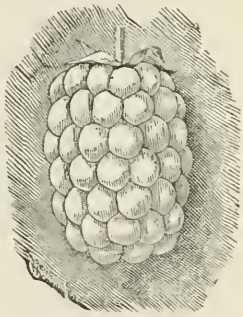
The Nova Scotia Apple Crop will be smaller than last year, though a good crop is expected in the counties of Annapolis, Kings, and Hants. Last year King's County alone produced 70,000 barrels, of which 20,000 were Gravensteins. Nearly as many were grown in Hants County, and double the quantity, or nearly 150,000, in Annapolis.

Training the Dewberry.—*Popular Gardening* gives the following directions:—Set the plants in fall or spring eight feet by six feet. When the vines have reached a length of thirty inches, the ends should be nipped out. Late in autumn or early in winter the vines are covered lightly with corn-fodder or straw. This is easily and cheaply done as the vines lie on the ground. The following spring all the vines are cut back to three feet, and thinned to four or five canes to the hill. The straw and fodder are now put under the vines for a mulch, and the berries kept clean. Treated in this way the improved sorts will bear every year large crops of splendid fruit.

The Marlboro.—Pres. T. T. Lyon, of Michigan, says the Marlboro proves to be an enormous producer of plants, and the fruit is large and showy, but indifferent in flavor. We agree with him with reference to its insipid flavor, a very serious fault with so attractive a berry. With us, it fruits heavily, this, its second year of bearing, and comes in between the Highland Hardy and the Cuthbert.

The Apple Crop in New York State.—According to *Vick's Monthly*, the American Depart. of Agriculture makes out too good a report when excepting New York State from the list of States in which the apple crop is light. The Western part of the State is the chief producing area, and there crop is light, because only a few kinds are bearing well, and the Baldwin, which is the leading variety, is producing very little—in most orchards.

White Blackberries.—On page five of this volume there is an enquiry from Mr. Bucke, of Ottawa, concerning white blackberries, in reply to which we mentioned the Crystal White as one of the varieties which has been to some extent cultivated. We now show an engraving



CRYSTAL WHITE BLACKBERRY.

of this variety, at the same time cautioning our Canadian readers against planting it, unless in the most favored situations, as it is not hardy. The fruit is sweet, creamy white in color, and of a good size. The canes are nearly white, and vigorous in growth, but not very prolific.

It will be interesting to hear what success attends Mr. Bucke's endeavor to propagate the variety which he found upon the banks of the Ottawa, and which will surely prove hardy.

Cold Storage of Apples is strongly recommended in the same journal, by Mr. Samuel L. Boardman, Secretary Maine State Pomological Society. He says they are becoming an absolute necessity to our commercial orchardists. He

cites the case of Messrs. Knill & Grant, of Nova Scotia, who have a great apple storehouse capable of holding 40,000 barrels of apples. The temperature is kept all winter at 35°, and here apples are kept with very little loss until they can be sold at the top of the market. P. M. Augur, State Pomologist of Connecticut, recommends the co-operative plan among apple-growers, for the erection of these storage houses.

The Cortland Seedling.—The Windsor *Record* of Friday, Aug. 12, says: Messrs. Lambert & Son have shown us a large sample of their Cortland Seedling grapes, now quite ripe and ready for picking. This is the earliest grape we know of. It is a fine flavored grape, and although, owing to the dryness of the season, the fruit is not so large as usual, the yield is prolific. Several of the bunches were picked from vines that had been planted only two years ago. Indeed, Mr. Lambert assures us that their vines, if properly cared for, will always bear the second season after planting. Grape growers ought to call on Messrs. Lambert & Son, and see these grapes, or write them for particulars.

The Jewell Grape is a novelty from Leavenworth, Kansas, said to be the earliest of grapes, and as hardy as the Concord, and excellent quality.

SAMPLES OF FRUIT.

Seedling Plum.—Mr. W. H. Wylie, of Carleton Place, sends us a sample of his seedling plum, to which reference has already been made. It is rather attractive in appearance, being of a bright red color. The form is oval, and the flesh yellowish, juicy, and of a mild sub acid and rather agreeable flavor, and would be excellent for preserving. Like all these natives it is a prodigious bearer, but is excelled by some of them in size though not perhaps in quality. The samples sent measure about three inches in circumference. Of course they are all far inferior in both size and quality to our cultivated European plums, but where these latter cannot be successfully grown, such natives as Wylie's Seedling should by all means be given a trial.

We sent a few samples of this plum to Mr. Beadle and his verdict is as follows:—

"They are no better than Weaver, Wild Goose, De Sobo, Marianna, Rolingstone, etc., etc., and others of our native wild plums. This seedling of Wylie's is a native plum, the only special point that I see in its favor is that it ripens early."

Advertising in the columns of this Journal pays well. Here is what an advertiser writes:—

SIR,—Please withdraw my advertisement in your valuable book, and let me know how much I owe you. Through it I am getting too many shippers. It is the finest thing that ever I subscribed to. I do not intend to give up my advertisement altogether, but just for the time being. Yours respectfully,

W. H. S.

Biographical.

It is with the deepest regret we announce the death of Mr. Robert Notman Ball, the pioneer fruit grower of the Niagara district, which took place on the 26th July, 1887. Mr. Ball was born in 1823 upon the farm on which he died, his father and his grandfather having lived there for 100 years before him, the latter an officer in the British army, being one of the U. E. Loyalists who left America at the time of the war of Independence, receiving a large grant of land as compensation for their

sufferings and losses in consequence of their loyalty.

Mr. Robert Ball from a very early age commenced fruit farming, and was the first Canadian from the Niagara district, if not from Canada itself, who shipped apples to Glasgow, where his brand, a beaver, is well known and appreciated. "Full measure and running over," and sound fruit in the centre of the barrel as well as at the head and the tail, being the characteristic of his dealings. Latterly Mr. Ball has more especially given his attention to peach orcharding, and at the time of his death he had some fifty acres of peaches just coming into full bearing, in addition to a few hundred trees of many varieties, upon which he may be said to have experimented for the last fourteen years. Mr. Ball was a keen observer, an indefatigable worker, and a good judge of all matters connected with fruit raising and horticultural work generally, and his opinion, always generously and genially given, was valued far and near by his neighbors. Besides his peach orchards, of which he was justly proud, he owned ten acres of grapes, forty acres of apples in full bearing, five acres of raspberries, besides as many acres of pears, quinces, plums and cherries.

This tells of Mr. Ball as the successful orchardist, but he was far, far more than this, he was a most genial neighbor, an intelligent and upright magistrate, an elder in his church—"Presbyterian," a faithful Sabbath School teacher, faithful for forty years to his Bible Class at Virgil (a village joining his estate), a wise, kind and valued friend to "Our Western Home," Niagara, a constant visitor of the sick and needy. In short, one upon whose tomb might very justly be written, "O man, greatly beloved."—*Contributed.*

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.

65. Paris Green for Curculio.—*Is Paris Green a proper remedy for the plum Curculio. Having read somewhere of its use as such, I sprayed my trees three times within two weeks, beginning as the blossoms were falling off, a tablespoonful to a pail of water, and about one-third of the fruit seemed to shrivel and drop off, and a number of the leaves turned yellow. Was the mixture too strong, or is there any danger of the fruit being poisonous to eat when ripe.* WM. E. BROWN, Blyth, Ont.

The weight of evidence seems to prove that spraying plum trees with paris green, if done early enough, that is, about the time of the falling of the petals, is one of the simplest means of saving the plums from the ravages of the little Turk. But you used the poison altogether too freely, and that accounts for the dropping of the fruit. A teaspoonful to a twelve-quart pail of water is enough of the poison.

66. Ladders.—*Where can I get a long extension ladder, or other apparatus for picking fruit? I lost a lot of cherries for want of a long enough ladder.*

W. F. BURTON, Hamilton.

We have cherry trees twenty-five and thirty feet in height, and have tried extension ladders, such as are used in putting up lightning rods, and other apparatus, but have never used anything more satisfactory than the ordi-

nary ladder made of cedar with hickory rounds. Any carpenter can construct this ladder of any required length, and two persons, one at the foot and one to raise it, can easily put up such a ladder, even if made twenty-five or thirty feet in length. Mr. George Zimmerman, Jordan, Ont., has a stock of various lengths.

67. Grape Vine Leaf Hopper.—*What is the latest and most recommended means of destroying the grape leaf hopper (E. vitis), commonly called "thrips," on grape vines? I have a Delaware which suffers badly from the insect.*

"AMATEUR."

The Delaware, and varieties of its class, is far more subject to the leaf hopper than the Labruscans, as Concord, Niagara, &c. Various remedies have been tried with more or less success, but owing to its habit of feeding upon the under surface of the leaves, it is routed with extreme difficulty. Puffing upwards pyrethrum powder against the under side of the leaves, with small bellows for the purpose, is quite effective, as also the plan of burning them at night with a burning torch, while one passes ahead beating the vines with a whip. The torch may be made with a basin of sawdust and kerosene, fastened on the end of a pole.

REPLIES TO PREVIOUS QUESTIONS.

Peaches Under Glass.—In reply to question 54, Mr. S. H. Mitchell, of St. Marys, Ont., sends us some fine samples of Foster and Early Crawford peaches grown under glass. He writes:—

In 1884 I ordered of a nurseryman two peach trees, a Crawford and Foster. They were to be short and small, fit for putting in pots to grow as dwarfs in green-house. They came to hand late in April, and to my great disappointment were large and about six ft. high, with only a few small twigs and buds near their base. I cut them down to about ten inches and planted them in eight inch pots, put them in green house first of May. They grew finely, and as they grew I pinched them into shape, so that in fall the heads were about two feet in diameter. During the winter I set them in shed adjoining boiler pit where they were kept dry and frozen part of the time. I set them in green house about March 25, already buds bursting open and some blossoms—result being fine peaches ripe July 20th. Next season repotted them in twelve inch pots, set them in green house 1st April—result, full of peaches, fruit smaller, ripe last July. This season left them in same pots, set them in green house later, put them in cooler spot, and fed them with liquid manure twice—result, trees full of fine fruit ripe Aug. 20th.

8. Infusorial earth. On page 155, July, 1886, *Canadian Horticulturist*, Mr. Bucke says, that boxes holding 30 lbs. of earth can be procured of Messrs. Esplin, Montreal, for 45 cents each.

Notices.

THE ANNUAL MEETING.

In response to an invitation from the Fruit Growers' Association of Grimsby, it has been decided to hold the next annual meeting of the Ontario Association at that place.

The meeting will be held in the Town Hall, at Grimsby, on Wednesday and Thursday, 28th and 29th of September, beginning at 10 o'clock A.M., with the the annual business of the Association, the election of officers for the new year, appointment of committees, &c.

At two o'clock P.M. the Grimsby Association propose taking their visitors out for a ride about this

INTERESTING FRUIT SECTION,

showing them some of the orchards, and most interesting points of scenery.

On Wednesday evening at 8 o'clock there will be a public gathering in the Town Hall to listen to addresses from Mr. A. McD. Allan, Prof. Wm. Brown, and other gentlemen whom we cannot yet name.

Thursday, from 10 A.M. to 4.30 P.M., will be given up to the public discussion of topics connected with fruits, flowers, or forestry.

Prof. Wm. Brown, of Guelph Agricultural College, will be present and help in the discussions. He has also promised brief, crisp papers on (1) Quality in Vegetable Soils, (2) Grapes from High Altitudes in Ontario, (3) Specimens of Walnut and Larch indigenous 850 feet above and north of Lake Ontario.

Mr. A. Blue, of the Department of Agriculture, Toronto, will probably be present and give an address on "The Trade in Fruit and Fruit Trees between Canada and the United States."

Mr. Patterson, of Grimsby, will speak on "Farm Mortgages in Canada."

APPLE GROWERS

and shippers are particularly urged to attend this meeting, as their interests will form a prominent topic of discussion on Thursday.

The subject of the Grape will also be taken up if time permits.

The meeting of Wednesday evening and of Thursday are quite open to the general public, both ladies and gentlemen.

AMERICAN POMOLOGICAL SOCIETY.—As has been already stated the twenty-first session of this Society will convene on the 14th of Sept. next in the city of Boston. Such subjects as the following have been chosen for discussion, viz.: Climate as Affecting Color in Fruits; Cross Fertilization of Grapes; Relation of Forest Destruction to Fruit Deterioration; The Apple Scab; Some of our most Promising Wild Fruits; Hardiness of Fruits, Causes and Experience; New Varieties of Fruits. The headquarters for those attending will be at the United States Hotel. Communications for the Convention should be addressed, Chas. W. Garfield, care of Secretary R. Manning, Horticultural Hall, Boston, Mass.

CIRCULARS have been sent out to all unpaid subscribers to this Journal. Should any person receive one who has paid, he will please notify us of the fact. A revision of the mailing list will be made this month, and all names not marked PAID '87 will be dropped.

INDUSTRIAL EXHIBITION.—We have just received from Mr. H. J. Hill, Sec. Industrial Exhibition Association, Toronto, a full programme of this excellent show, which begins on the 5th of Sept. and closes on the 17th. It contains a full list of the numerous special attractions to be presented.

WESTERN FAIR.—We have also received from Mr. Geo. McBroom, Sec. of the Western Fair Association, London, Ont., a Prize List of the Exhibition which takes place Sept. 19–23. The arrangements are most creditable to the Committee.

P. Curry, of Keokuk, Ia., claims the championship for the biggest yield of strawberries. He has a plantation of Crescent, fertilized by Captain Jack, which is 10 by 13 rods, and from which he picked in 1886, 5,060 quarts, and in 1887, 5,100 quarts. The secret of the yield is deep ploughing and heavy manuring and mulching.

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 BEE-KEEPERS GUIDE, or Manual of the Apiary. By A. J. Cook, Prof. of Entomology in the Michigan State Agricultural College. 12th edition. Price, $1.25.

We have no hesitation in giving this book the highest commendation as a complete manual for the use of apiarists. It is the work of years. The first edition was published in 1876, and contained the substance of the author's lectures to his students; but such has been the demand that it has gone through twelve editions, each time being enlarged and more and more fully illustrated, until it is now the leading treatise on apiculture, both from a practical and from a scientific standpoint. After an interesting introduction, the book is divided into two parts, the first of which deals with the natural history of the Honey-Bee; and the second, which occupies the greater part of the book, takes up the apiary, its care and management. We hope soon to find room for some extracts from this work.

TWELFTH ANNUAL REPORT of the Montreal Horticultural Society and Fruit Growers' Association of the Province of Quebec. E. J. Maxwell, Montreal, Secretary.

A most valuable Report. Among the subjects discussed at the Winter Meeting were the following, viz.: Best varieties of Russian apple introduced by C. Gibb; The Spot Disease of the Fameuse, introduced by Prof. Penhallow; and some New and Useful Fruits adapted to the colder sections of Canada, by P. E. Bucke; Grape Culture, by Wm. Pattison; Fuchsias, how to grow, by S. S. Bain, &c., &c. It also contains a paper on "The Fruits of Turkestan," by A. Regel, St. Petersburgh; and one on "Swedish Fruits," by C. Gibb, of Abbotsford, Que.

NIGHT AND DAY. A Record of Christian Philanthrophy. Edited by Dr. Barnardo, 18 Stepney Causeway, London, Eng.

INTERNATIONAL EXHIBITION OF INDUSTRY, SCIENCE AND ART, Glasgow, 1888. Prospectus and Regulations. Patron—Her Most Gracious Majesty Queen Victoria. Secretary—Wm. M. Cunningham, 27 St. Vincent Place, Glasgow.

HORTICULTURAL ART JOURNAL.—The August number, like all the issues of this beautiful magazine, is a gem for the parlor table of any gentleman of taste, whether he be gardener, fruit grower or florist. The four colored plates in this number are (1) Rose, Paul Neyron; (2) Chickasaw Plum, Quaker; (3) Chickasaw Plum, Forest Garden; (4) Red Cheek Melicoton Peach. The Journal is ably edited by Mr. .T B. Jenkins, Horticulturist, of Rochester. N.Y., and published by the Stecher Lithographic Co. of the same city.

Humorous.

"Every tree is subject to a disease," said a speaker in a fruit-growers' convention. "What ailment can you find on an oak?" asked the chairman. "Acorn," was the triumphant reply.—*Boston Globe.*

"My dear," why are the eggs always hard at breakfast now?" asked Mr. Snaggs. "They must be eggs of the new hens," replied Mrs. Snaggs, thoughtfully. "The new hens! Why should their eggs be hard?" "They are Plymouth Rocks, you know."—*Pittsburg Chronicle.*

He—They have dropped their anchor. *She* (on her first)—Serves them right. It has been hanging over the side all day long.

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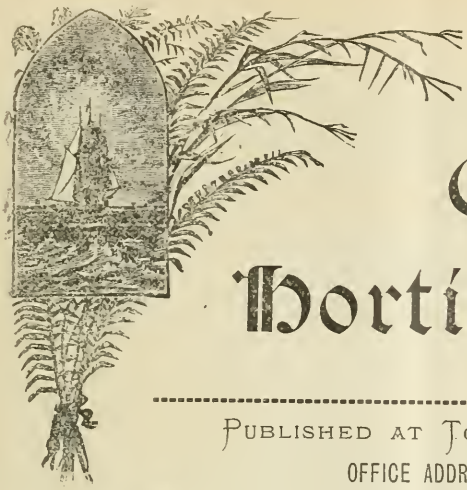
AMPELOPSIS VEITCHII.



The Canadian Horticulturist.

PUBLISHED AT TORONTO AND GRIMSBY, ONT.

OFFICE ADDRESS—GRIMSBY, ONT.

VOL. X.] OCTOBER, 1887. [No. 10.

OCTOBER.

How time is flying! We October meet
  Flinging around bright leaves of gold and red;
Pausing to make a crown of bitter-sweet
  And immortelles, to place upon her head!
While nuts from opening burrs fall thick and fast,
As gay October brushes swiftly past!

The gardens still look splendid. Dahlias rear
  Their stately heads around, while salvias spread
Their scarlet petals, and while often near
  We mark the queenly cardinal's bright red.
All blossoms, now, look gorgeous in the sun,
Earth's "melancholy days" have not yet come.

The very skies are glowing! Cloud on cloud
  Piles up, of silver shot with rays of gold.
Then crimson veils fall o'er them, veils to shroud
  Scenes brighter far than earth-eyes could behold.
We look around, above, below, then sigh
Alas! October, too, must soon pass by.

Sophie L. Schenck, in Brooklyn Magazine.

THE JAPAN IVY.

CANADIAN scenery is at its very height of beauty in the month of October. The foreign tourist could not visit our country at a more favorable time. No one, who has any eye for the charms of nature, can look upon the varied hues and gorgeous tints of our shrubs and trees in autumn, without exclamations of admiration. The endless variety of shades assumed by the Maple, the Oak, the Sumach, the Virginia Creeper, and the numerous wild shrubs, afford a constant succession of surprises.

It seems therefore quite appropriate, at this time, to present our readers with a painting of the Japan Ivy, one of the most ornamental of climbers, on account of the brilliance of its foliage. Neither this, nor the American Ivy, as the Virginia Creeper is sometimes called, belongs to the Ivy genus,

which is included in the Ginseng family, but both are members of the Vine family. The name Ampelopsis Veitchii is given it in honor of Mr. Veitch, the English nurseryman who introduced it from Japan into England.

This beautiful creeper is quite independent of trellises or strings for its support. Indeed, it will climb a stone wall, and cling so tenaciously that it can only be removed with the greatest difficulty. Plainly, therefore, it should not be trained upon any surface that needs painting or renewing.

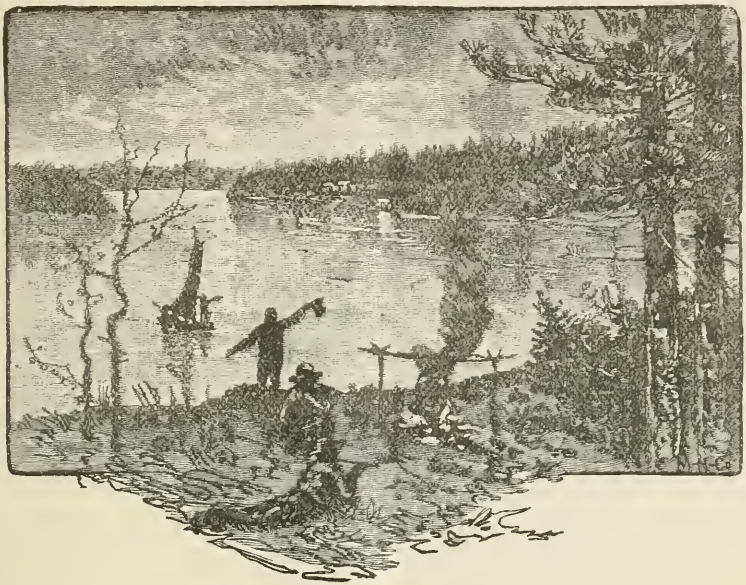
The foliage during the summer is vigorous, and of a dark rich green, but in the autumn, if on dry soil and in a sunny location, it assumes brilliant tints of scarlet, crimson, and orange. Some magnificent vines may be seen at Boston, New York, Geneva (N.Y.), where it is considered perfectly hardy. A few have been planted at London, Ont., and other places in Canada, and we hope it may endure our climate, and be one more addition to the charms of our autumnal scenery.

AMONG THE MUSKOKA LAKES.

AFTER parting with our friends, at the Collingwood meeting, the temptation to visit Muskoka was too great to be resisted. What a pity that the great forest fires have so stripped off from the rocky shores and islands of these lakes, nature's covering; and has exposed to view the barren rocks, and the charred trunks of what once constituted a most valuable forest of pines.

Notwithstanding this, a series of some eight hundred lakes, dotted with islands of every size and shape, with rock-bound coast, and ever varying scenery, still makes the Muskoka District one of the most attractive regions in the world to summer tourists. Bundles of camping outfits are daily transferred at Muskoka wharf from the railway cars to the steamers, which await their loads of pleasure seekers, eager to carry them up the lake toward Bala, Lake Joseph, or Lake Rosseau. At Gravenhurst, we had the pleasure of meeting Mr. J. P. Cockburn, an active member of our Association, who has done much toward encouraging fruit culture around Muskoka lake. Although fully occupied with official duties in connection with a busy post office and express office, he found time to drive out with us to a bog, where the interesting Canadian pitcher plant (*Sarracenia Purpurea*) grew in great abundance. He also took the writer through his green house, and made him accept a beautiful specimen plant of Begonia rubra. In his garden we found a seedling black raspberry, perfectly hardy, and as productive as any of our cultivated varieties.

Our sail up Muskoka lake was charming. Nor was it uninteresting to be informed that this lake was once, in the days of the Huron Indians, called "Petit Lac des Hurons," and



MUSKOKA LAKE.

later, Muskoka, from the Missasaga chief, whose name was sometimes spelled "Mesqua-Okee." Farmers and fruit growers surely need recreation, as well as merchants and professional men; and a week spent in such a region as this, with every care and thought of work or business wholly erased from the mind by the charming surroundings, and by the enchanting amusements of boating, fishing, bathing or roaming the woods, will rejuvenate the jaded and worn spirits, and refresh the whole physical system.

It will be a mistake to suppose the Muskoka district wholly unadapted to the cultivation of fruit. We have many intelligent and prosperous members of our Association living at Gravenhurst, Bracebridge, Bala, Glen Orchard, etc., who have learned, through the reading of the *Canadian Horticulturist*, and the Annual Reports, the varieties of fruits best adapted to these colder sections of Ontario. In apples they are growing the Haas, Tetofsky, Wealthy, Duchess, etc. Most varieties of plums grow well and bear abundant crops. Strawberries succeed exceedingly well, and although our finer varieties of raspberries and blackberries are too tender, yet the woods abound in hardy natives of fine size and flavor, which yield such quantities of fruit as to render the garden cultivation of them quite uncalled for. Being unavoidably detained near one of the islands near Bala, the captain gave us all permission to land for a couple of hours. Everyone enjoyed the ramble among the rocks and bushes, and not less, the feast upon the huckleberries which grow in great pro-

fusion on the dry sand, in no way affected by the awful drouth of this memorable summer.

From all this it appears that, although the Muskoka District is adapted chiefly to cattle and sheep raising, yet there may always be a sufficient quantity of fruits grown for home uses, and for the supply of the near markets, an object worthy of the consideration of those who reside in that district.

FRUIT GROWING IN MUSKOKA.

A LETTER FROM BRACEBRIDGE.

Sir,—I am but a beginner in small fruit growing, and climbing the hill very slowly, as I have to learn as I go, and having very slender means at my command, I find it indeed a very slow job; but both my wife and I are great lovers of horticulture, so we stick to it.

Now I find the strawberry wonderfully adapted to this country, I have the Crescent, Wilson and Sharpless, and they all produce bountifully. In its wild state, I have picked strawberries in the bush this summer fully as large as moderate Wilsons, much more handsome and better flavored, but somewhat late. Currants of all kinds do well; the red and white seem to suffer most, as they are attacked in the spring with a little green worm or caterpillar, but one or two applications of white hellebore is sufficient to free them. That is all they suffer with that I can see, and they also give us lots of fruit. I have a few gooseberries, "Houghton Seedling;" they are also attacked by the same worm as currants, and same treatment helps them. They were loaded this year. I have picked wild gooseberries also in the bush this year, fully an inch long, dark red to purple and of splendid flavor, the only objection is the long tough prickly hairs. Raspberries, red, black and white, grow in abundance on all burnt places, and around meadows and roads, free to all, and in fact are sometimes worse than weeds. The plum is successfully grown, I can't tell you the species, there are several kinds and all make splendid preserves. Blackberries and cranberries also grow wild, as does the huckleberry. The crab apple seems to be at home here; it is a splendid sight to see the trees with their beautiful fruit, and in such immense quantities, loaded year after year. Rhubarb is grown largely, and in fact at the height of the season it becomes so plentiful that there is actually no sale for it here.

I have made enquiries, and find that there are certain apples which seem to thrive well here, amongst them are the Wealthy and Tetofsky and some others, of which I do not know the names. There are some grapes grown in and around Bracebridge. I have a Niagara planted this spring, it has grown three feet; got it as premium with *Horticulturst;* hope it will succeed. We also have wild black cherries, but am told that tame ones do not do well.

Yours truly,
J. COVILL THOMPSON.
Bracebridge, Muskoka.

A LETTER FROM BALA.

Sir,—In answer to yours asking what fruits we can grow at Bala, and what wild fruits grow here, I beg to say that the following varieties of apples are fruiting here: Tetofsky, Early Harvest, Haas, and Oldenburg (Red Astrachan and Wealthy have not yet fruited). Pears will not grow here. I do not know anyone who has plums, except wild ones. Raspberries: Turner, Cuthbert, Niagara, Gregg and Shaffer's Colossal, but I don't know if the latter has borne yet. All kinds of currants and American gooseberries succeed.

Wild fruits here are raspberries,

blackberries, thimbleberries, red plums, huckleberries, and cranberries; also hazelnuts, when the bears will let them alone.

I forgot to say that some kinds of grapes grow well here. Concords generally ripen, but I do not know of any other kind fruiting, though the vines are looking well. Trusting the above will be acceptable, I am, sir,

Yours respectfully,

Aug. 30, 1887. H. C. GUY.

FRUITS IN MANITOBA.

SIR,—I find that in Manitoba there is very little fruit grown—no apples, no pears or plums, scarcely any currants or gooseberries. Some have cultivated a few black currants, plants taken from the woods, and the crop has generally been good.

If you could recommend a good apple that would stand our climate, I could get it planted in a highly cultivated piece of land, and could report progress.

If fruits could be introduced more quickly into this province than is now the case, and articles or paragraphs dealing with this province could be introduced into your publication, there might be many who would be glad to pay the trifling subscription.

I am, yours truly,

A. G. HEPWORTH.

St. Laurent, Man.

NOTE.—We shall be glad to introduce from time to time notes upon hardy fruits for the benefit of our Manitoba friends, and shall be pleased at any time to receive items of experience from them.

One of the best of the hardy apples in northern Ontario is the Wealthy, and we should be glad to know whether it would endure the neighborhood of St. Laurent. It is a late fall, or early winter apple. The Haas, the Tetofsky, Duchess, and the Whitney's No. 20, are also quite hardy.

DIRECTIONS FOR PACKING APPLES.

Two barrels of apples of the first grade sell quicker, and for more money than a three barrel mixture of these two barrels with another barrel of the second grade. It pays better to market only the finest fruit in the best possible shape.

Apples for marketing should be picked from the tree by hand, and handled gently; all that fall should be discarded, even if they do not show any bruise at the time. Discard everything specked, or in any way faulty or imperfect. Pack in the best new barrels; dont use poor barrels. Marketable apples will bring higher price enough in neat first-class barrels to more than pay the difference in cost. See that the barrels are made, of well seasoned wood, both heads and staves, so that they will not warp and the heads come out in transportation.

Remove one head of the barrel; select *uniform*, fair *average apples* (not the largest) and hand pack them, stem down, around the edge of the barrel; then another row inside the first, and so on until the head is nicley covered close and tight, so they will not shift; then put in about a half bushel more, and shake the barrel carefully, so as not to disturb the facing; then add another half bushel and shake as before, and so on until the barrel is filled. It is *important to shake the barrel five or six times* while being filled, to settle the apples into the closest space, to prevent further settling in shipment. Let the apples come up to the top of the chime, lay the head on, lean over the barrel, bear your weight on the head and shake until every apple is fixed into a shiftless place; then use

the press to gently crowd the head down to its place, and nail securely.

Turn the barrel over and mark *the kind of apples*, the *growers name or initials*, and *Extra, Choice, Prime or Xs, to suit the grade.*

Yours &c.,

PANCOAST & GRIFFITHS.

Philadelphia, 14 Sept., 1887.

THE APPLE HARVEST.

The best time to pick is when the Apples have coloured up to show well. Never pick red varieties till they get red. But do not wait till all the orchard or even all on one tree get thus into the proper condition to pick.

The best plan is to make two pickings from each tree. That is, pick all that have colored enough to insure their ripening up properly, and only show the least sign of shriveling, as at that stage they keep the best. Some soils, or situations will ripen up trees ahead of others ; look out and pick these first. In ten to fifteen days all that have been left will ripen and redden so you would hardly know your own orchard. They will grow enough at this time to pay for all the extra work, and the last picking will give the most solid and best keepers.

To take care of the Apples as they are picked through the hot days of autumn till put into winter quarters or market, I have practiced two ways. The first is to haul the apples in barrels into the barn or other house, where the sun is completely shut out, but so arranged that the air will circulate freely. Pour them out on the floor not more than four feet deep and they keep that way very well till winter. The other way is to pack the apples in barrels as they are picked. Put in no rotten or speckled ones ; fill the barrels as full as you can, put in the heads well without using the press. Haul in and store in a barn or apple house constructed without floor, on rolling ground, where it will never get wet. Permit free circulation through it, but no sun. Such a barn gives entire satisfaction.

Apples thus handled are worth 25 cents per barrel more than if left out till final packing time. Never put in piles in the orchard, to take sun, rain, and every kind of weather. Never cover with straw; I think it about the worst material one could use, as it heats in the sun, and makes a harbor for mice. It is also difficult to keep the straw and chaff out of the barrels. Corn-fodder is much better to cover with, if you use anything.

To put up the apples for market, have a table about three feet wide, ten feet long, and with side boards about six inches high. Empty two or three barrels on the table, and pick off the rotten or speckled ones before they get mashed. If they get the skin broken the cider will stick to the others, making them look badly.

Pick out a basketful of medium size, not the biggest apples, smooth and well colored, and set two layers in the head of the barrels, stems down, and fit them in tight. When there are larger apples in the body of the barrel than there are in the head, they sell the more readily.

Make at least two grades, and mark them as such. As there must not be a specked, bruised, or rough apple in the two grades, that will leave out some for the third, and they can be sold in a near market, or for apple butter.

When you have filled the barrels shake them to settle the apples into place. Level off the head apples above the ends of the staves, and press the head down with as little hammering as possible. Nail the hoops, driving the nails as straight down into the staves as you can. Then when the merchant

opens the barrel the nails will draw out as the hoop is knocked off. Mark the grade, name and your name on the other end and they are ready for market.

N. COX.

QUERIES AND NOTES.

PRUNING.

DEAR SIR: I have somewhere read that apple tree pruning should be carried out in April; having performed the operation in that month, I was much disappointed on finding that every branch cut from the tree was replaced by three or four; would it be better to defer the operation till the sap has risen?

ASPARAGUS.

My asparagus beds (planted twenty years since) have failed for the first time, this season. The mode of treatment adopted is to cut and burn the healm on the beds early in November, then dress with well-rotted manure, afterwards a good sprinkling of salt is applied, washed in with liquid manure; can you or any of your numerous readers recommend a different treatment?

WHITE CEDAR AS WINDBREAK.

After an experience of thirty-one years, I can recommend the white cedar as a wind break; with us, open as we are to the gales from the Georgian Bay, they sow themselves and thrive wonderfully, the only fault is that if not thinned in time they die out. I have upwards of a mile and a half of cedar hedges which, when clipped, grow as thick as the yew in England.

PIGS IN ORCHARDS.

Would it not be advisable to plant our orchards with artichokes for pigs? The animals when rooting them would loosen the soil without damaging the trees, the orchard being dressed every third year. I found when trying the experiment in England that sufficient tubers remained for next year's crop. The artichoke would be ready for the pigs when the stubbles had been fed off, and the pork is very firm. What artificial dressing for the orchard would be a substitute for farm yard manure, which I have difficulty in procuring?

THOMAS SIBBALD.

Sutton West, Ont., 11th Sept., 1887.

REPLY.

With regard to the *season of pruning* there is little to choose between the months of March or April, and June or July, providing it is done annually and judiciously. It is thought, however, that wounds made in June heal more readily than those made in the spring.

Severe pruning, or sawing off large limbs should always be avoided by training each tree in the way it should go from the first. Some people persist in sawing out the leading limbs to let in the light. This always induces the growth of sprouts, at whatever season it is done, and is injurious to the tree.

As for growing *artichokes in an orchard*, and keeping pigs in it, the plan is a good one; but if the trees are grown up so as to be safe from their gnawing the trunk, we would prefer making the orchard a sheep pasture, for the sake of tidiness.

The best substitute we know of as a fertilizer for an orchard is the common unleached wood ashes.

A COLD STORAGE HOUSE.

I am much interested in a cold storage room which I am building above ground, and expect it will be frost-proof. It is 80 by 40 ft. in size. It will be cheaply built, the sides are lined with paper, and there are 18 inches of sawdust between the two walls. The first floor will be 8 ft. high with sawdust or leaves overhead. With the ventilation and temperature under control, I can

begin gathering apples a week earlier —that is, late in September, and can preserve the freshness and aroma of the fruit for several weeks later than in the cellar. If the slight moisture upon the apples can be prevented in the fall, and a low and even temperature can be kept, one can secure a finer flavor and keep apples for weeks longer than by the ordinary careless way.—W. H. HART, in *Farm and Home.*

PRUNUS SIMONI.

SIR: In looking over the August number of the *Horticulturist*, Prof. Budd is quoted as saying of the Prunus Simoni or Simon's Plum: "It will be the king of fruits—better than any apricot," &c. From my own knowledge of Prof. Budd's opinion of this tree and fruit, as expressed publicly and in private, the article referred to seems to flavor of the nurseryman's catalogue rather than of the cautiously expressed opinion of the careful experimenter.

In reply to recent query about this fruit by the *Rural New-Yorker*, Prof. Budd says: "I first met with it in bearing in the Valley of the Moselle, in Eastern France, where it was introduced from North-east China by Simon Louis, of Metz, through his brother-in-law, Eugene Simon, when he was French Minister at Pekin. Mr. Louis seemed to place quite a high estimate on its fruit for culinary use, especially for growing in sections where the peach failed to do well. After ascertaining that the tree endured the summers and winters of Iowa as well as the Chickasaw plums, and after tasting its peach-flavored sauce, I naturally recommended it for trial. But this was followed by the positive assurance that it would not be apt to be worth growing in sections where the peach, nectarine, or the best apricots succeed moderately well. I said then, and believe now, that on the northern borders of the peach belt it is worthy of trial, as it comes nearer to the peach and nectarine in flavor, when cooked, than any variety of the plum I ever met with.

"Some good botanists of Europe agree with the writer in the opinion that in tree, flower, and fruit it comes nearer to the almond and peach than to the plum family, and that crosses with it of both peach and plum may bring interesting and valuable results. Aside from its possible value for fruit, I may add that it makes a neat-foliaged, pyramidal tree for lawn or walk border."

Yours truly,
JOHN CRAIG.

FALL PLANTING.

Sir,—The experience of Mr. T. H. Rice with fall planting given in September Number is the experience of thousands, but I really wish the gentleman had gone farther and given his opinion as to the cause of the loss sustained. To my mind, the fact that a great many fall planted trees are lost throughout the country every year, is not proof that this season is objectionable. I do nearly all my transplanting with the best success in the fall, always being particularly careful to set the tree firmly in the soil, compacting the earth closely to every root, and if large, staking to prevent swaying by the wind.

Frost will have no more effect for injury, on a tree thus planted than it would in the nursery row, provided the soil is dry, and where the benefit over spring planting comes in, is that during the winter the roots heal and callous, the trees get an earlier start in spring with the result of 6 to 12 inches better growth the following season.

I do not wish to be understood as depreciating spring planting, not at all, but my experience leads me to favor fall planting, properly done. If

planters would observe the following details, I think there could be no fault-finding with fall planting.

1st. Get your trees direct from the nursery, and don't allow someone else to do it for you, and leave them on the road or railway station for two or three weeks to freeze and thaw.

2nd. Never "heel in" but plant at once with care and without undue exposure; stake them.

3rd. Plant nothing too tender for the climate of your locality (except for experiment) because if it does not disappoint you the first year it is sure to do so some day. J. H. WISMER.

Port Elgin.

PRUNING THE QUINCE.—Mr. W. W. Meech, who has achieved signal success in quince culture, reports the following system of pruning in the *Farm Journal:*

"After the leaves fall in Autumn and before they start in Spring I go over every tree and cut back every shoot. If a foot growth was made the year before, cut off half of it; if two feet, a little more than half, and if three feet grew, it will pay to cut off nearly two-thirds of it. A judicious thinning out of older wood will also be found desirable. Then when the new growth starts, rub off the weaker buds so as to let but one shoot remain at each. As generally grown, the quince is too weak to have more than one shoot at a bud, but as I handle my trees, two, three and even four shoots often seek to grow from the same place. This method of severe pruning has been condemned as being unnatural. But experience proves the wisdom of this severe pruning of the wood and of an equally severe pruning of the fruit."

I think the *Horticulturist* is gaining in value, giving with each number, a cheap fund of knowledge for fruit growers. A SUBSCRIBER.

The Vineyard.

ASHES AS A FERTILIZER.

For vineyards, all things considered, I regard unleached ashes the best fertilizer known. A ton of hardwood ashes contains 320 pounds of potash, worth $16. 105 pounds of phosphoric acid (insoluble) worth $5.25. Omitting all the other ash constituents, which have some value of themselves, the potash and phosphoric acid of a ton of such ashes are worth $21.25, or nearly six times the value of a ton of fresh horse dung.—*President Phillips, West Mich Hort. Soc.*

SHIPPING UNRIPE GRAPES.

I wish to say, and also to impress it upon the mind and memory of every grape grower present, that there is nothing so disastrous to the grape market as the shipping of green grapes early in the season. It is sure to bring prices down to a low point, and once down it is hard to bring them up again. The consumer who has been waiting patiently for the grape season to open, buys them with the expectation of finding them ripe and delicious; but instead finds them sour and unfit to eat. The consequence is it will be some time before he will try his chance again. Thus the market becomes seriously damaged at the outset.—*President Phillips.*

ARTIFICIAL CLOUDS were recently made for the protection of vines from frosts at Pagny, on the Franco-German Frontier. Liquid tar was ignited in tin boxes, and pieces of solid tar on the ground near the vines. Large clouds of smoke arose and protected the vineyard for two hours. Although vines in the neighborhood were injured by the frost, all that remained under the clouds were left uninjured. Of course

this contrivance can succeed only in calm weather, but it is only in calm weather that white frosts occur.

Small Fruits.

THE NEWER STRAWBERRIES.

(M. Crawford, Cuyahoga Falls, O.)

Jessie.—This variety fruited with me this year for the third time, and after watching it carefully, I am still of the opinion that it is, all things considered, the best ever introduced. While it is not perfect in every respect it combines all the desirable qualities in a higher degree than any other yet offered. It has no defects worth naming, and those who have a stock of it may congratulate themselves on their good fortune.

Itasca.—This is all that was ever claimed for it. For vigorous growth and productiveness, it is one of the best. It has shown no rust thus far. The fruit is nearly round, about the size of the Crescent, and of very good quality.

Bubach's No. 5.—This is, with me, next in value to the Jessie; and some even prefer it to that variety. The plant is all right and is a great bearer. Blossom, pistillate. The fruit is very large, a little irregular in form, ripens all over, and is a very attractive variety.

Jewell.—This is, with me, one of the valuable varieties. The plant is free from rust, of large size, and an abundant bearer. Blossom, pistillate. It makes few runners. In some localities it is a poor grower. The fruit is very large, of good form and color, and altogether a very attractive berry. It seems to do better in the east than in the west.

Belmont.—This is a good grower and is free from rust. With me it fails in productiveness, and the fruit is far less perfect in form than I was led to expect.

(From John Little Granton, Ont.)

Among the new varieties fruited here this season they stand in value in the order named for size, productiveness, and length of bearing time:

1st. *Mrs. Cleveland* and *Bubach No. 5.* 2nd. *Summit.* 3rd. *Ontario.* 4th. *Henderson.* 5th. *Jewell.* 6th. *Ohio,* a wonderful bearer. 7th. *Anna Forest*; if it was as productive as it is for size it would be a valuable market berry. 8th. *Lida,* a good grower and fairly productive. 9th. *Gold.* I should have numbered it *fourth,* it is such a healthy, beautiful plant, it glistens in the sun as if varnished, fruit good, wonderfully productive.

I will merely notice the *Jessie* again. Having seen the Jessie fruiting on the originator's grounds, and at Mr. Crawford's, and on my own place, and on none of these places having any extra care, I freely say it is the best berry offered the public yet.

"THE MARLBORO RASPBERRY."

Marlboro.—Large as Cuthbert, firm and very handsome—does not taste so good, but is better than Philadelphia and Franconia—nearly as early as Hansell. I found this variety almost worthless on sandy land without manure: it will not endure neglect and grow big enough to bear a crop like Hansell and Cuthbert. But a plantation we made last year on fair garden land, which contains a fair percentage of clay, has made a fine luxuriant growth. Persons who have good clay loam may find this the most profitable berry for market which can be grown, as it fills the demand for large berries nearly a week before Cuthbert appears on the scene.—*T. C. Robinson, Owen Sound.*

Samples of Fruits.

GRAPES.

CLINTON.—Sir,—I send by to-day's mail a sample of grapes grown by myself in this district. They were bought for Clinton. Would you please tell me if they are true to name, and your opinion of their quality.

Yours truly,
PHILIP JAMES.
Glen Orchard, Muskoka, Aug. 25, 1887.

The bunch of grapes you send is correctly named, and is well coloured, considering the date of gathering. Though it colours in September it improves in quality if allowed to hang until frost. At best, however, it is very poor in quality when considered as a table grape, and its small size and tough pulp make it still less desirable. But as a wine grape it is highly valued because of its brisk vinous flavor, and its great productiveness. It is also very hardy and in this respect well suited to your section. Botanically speaking the Clinton is a hybrid between the Riparian or Riverside group of American grapes, and the Labruscan or wooly leaved group, such as Concord, Ives &c.

WYOMING RED AND LADY.—On the the first of September, Mr. Ambrose Pettit, Grimsby, sent us in some beautiful samples of these grapes which he was just shipping. The bunches of the former are large and close, the berries much larger than the Delaware, and covered with a very evident bloom, but it is in quality inferior to the high standard of that variety, and it has a somewhat pulpy centre.

PLUMS.

Berlin, 22nd August, 1887.

Dear Sir,—I have sent you to-day per express a small box containing samples of four varieties of plums grown from seeds on my grounds, three of which I think will bear favorable comparison with any of foreign importation. All the trees are perfectly healthy, and have as yet not exhibited the least tendency to the black-knot plague. One of the varieties is about the size of a damson, thus showing the tendency to run back to original conditions. No. 3 has the same flavor of the McLaughlan but not the shape, and possibly may be a seedling of that variety. I have another equal in quality to the Bradshaw but larger; however it is not in fruit this season. My object in sending you these samples is merely to show you that we Canadians can originate as good fruit as foreigners can, and possessing degrees of acclimatization more to be relied on, and so ultimately we may depend upon our own energies. All we want is the diffusion of a little more knowledge on the subject which we will eventually acquire.

I am, yours truly,
SIMON ROY.

NOTE.—These seedlings of Mr. Roy's are certainly valuable as indicating the possibilities before us in Canada in the way of obtaining new and improved varieties of fruits by careful experiments in growing seedlings and in hybridizing with existing varieties. Two of these seedlings are purple, one is green and one yellow, and three of them appear to be worthy of cultivation.

Sir,—At the request of Mr. Wm. Cruse I send you a small box of plums, the product of a tree which sprang up spontaneously in the garden. Do you recognize the variety, or if not would you give it an appropriate name? Yours, &c.,
THOS. GORDON.
Owen Sound, 3rd Sept., 1887.

These plums resemble the Imperial Gage in appearance but the stem is longer. If hardy and prolific the seedling may be worthy of general cultivation and should be submitted to the

fruit committee at one of the meetings of our Association for name.

Moyer's New Early Red Grape.—On the 8th of September, Mr. Moyer called at our office, leaving some samples of this new grape. In quality it is excellent, as sweet as the Delaware, devoid of the pulpy centre of Wyoming Red and many other early grapes, but not quite as sprightly as the former. The bunch is usually shouldered and fairly close, while the berry is of medium size. The color is a much darker red than either Delaware or Wyoming Red. One great point claimed for it by its introducer is its earliness, in which respect is is claimed to precede Wyoming Red. Mr. Moyer thinks it could be marketed about the 15th of August, fully two weeks ahead of the Delaware. He also claims that it is a stronger grower and has a better leaf than the latter, besides being remarkably free from mildew and rot.

The grape is a hybrid, produced by Mr. W. H. Read, of Port Dalhousie, by fertilizing Delaware with Miller's Burgundy.

The Northern Light.—Mr. P. E. Bucke, of Ottawa, writes in glowing terms about this new white grape, which originated on the banks of the Ottawa. He says it is the best white grape in cultivation — indeed, a perfect gem. The color is greenish-white, with pink fruit stem. The leaf resembles the Concord both in size and texture, but is more leathery ; there is no foxiness about the fruit, either in smell or taste, and it is very sweet when fully ripe, with a slight sub-acid. It ripens with the Moore's Early. The vine is a tremendous grower, and hardy. It has borne fruit four years : the first year, two bunches ; second year, 20 pounds ; third year, 25 pounds ; and this year, about 20 pounds.

Uses of Fruits.

Next in importance to the best modes of cultivation and the selection of the choicest varieties, comes the most approved methods of preparing fruits for use. We would be glad therefore if the ladies, who read this Journal, would make free use of this column for an interchange of ideas on this subject.

THE GIRL'S BEST COOKING-SCHOOL.

THE mother's kitchen is the girl's best cooking-school. The same hands that make crazy quilts for amusement can make rag carpets to cover home floors. Rag carpets are just as æsthetic as crazy quilts. The washtub is an excellent gymnasium. Were it only a craze every girl in the land would be taking lessons on the washboard. If these are menial occupations we have made them so. They hurt the pride more than they do the physical powers. These duties distributed in a family would not fall hard upon any one member. It will be remembered that Mrs. Whitney, in "We Girls," makes one of them say of their neat housekeeping :—"We could not tell whether we dined in the kitchen or kitched in the dining-room." —*Detroit Free Press.*

USES OF APPLES.

APPLES *vs.* ROOTS.—Nothing else will so help the flowing milk of the cows for winter feed as a pailful of ripe apples chopped into slices and sprinkled with the meal. It pays as well to grow apples for the stock, if not better, as to grow roots in the field.

APPLES AS MEDICINE.—Apples stewed and sweetened are pleasant to the taste, cooling, nourishing and laxative, far superior in many cases to the abominable doses of salts and oil usually given in fever and other diseases. Raw apples, and dried apples stewed, are better for constipation than liver pills.

FRIED APPLES.—Wipe a few nice, smooth-skinned apples, have ready a

spider with a little butter and lard in it, let it get hot, and slice the apples into it, sprinkle a little sugar over them, and fry slow to a nice brown, taking great care not to let it burn.

FRUIT SYRUPS.

By Miss J. Power.

What a pity that the medicinal virtues of grape syrup are not properly known. Grape syrup, or fruit syrup of any kind, is not jelly, but the pure juice boiled down without sugar till it thickens like syrup. All fruits have their own sugar, which may be condensed by long evaporation, making the most delicious and healthy form of preserves. Pick over the grapes, rejecting all unsound ones, and press in a cloth in any convenient way, the old wooden screw press being much better than anything with metal about it, which gives a harsh flavor. Strain the juice into a porcelain kettle, or, what is better, a thick, shallow stoneware jug, holding four gallons or more; heat quickly and boil hour after hour steadily, without scorching. Stoneware holds the heat and is less apt to burn juice or jelly than any stoveware. The juice cooks best set in the oven, out of dust, where no draft can check its boiling. All syrups evaporate faster in certain states of the atmosphere than others, and a clear, drying day, or one just before rain, when the water boils away fast in the tea-kettle, is the chosen time for all preserving. Making syrup is an all-day affair, and a good plan is to set the jars of juice in the oven at evening and keep a low fire all night, finishing off next forenoon. Six quarts of grape-juice should make one of syrup, wine-coloured, lucent, of delicious, refreshing perfume and flavor. One tablespoonful in a glass of water gives a delightful drink, like fresh grape-juice, the true substitute for wine with all temperate people, and the finest medicine for correcting a feverish, bilious state ever known. The Syrup itself is valuable for restoring strength, and consumptive persons should take it by the tumbler daily, sipping it leisurely with sugar, if too tart for the taste. It makes new, rich blood, it cleanses the system, clears brain and feeds starved nerves. It has the hypophosphites which doctors prescribe for wastes of tissue, and taken freely will arrest even critical stages of disease. People fed on pure food, with abundance of fruit, need never dread cancer, Bright's disease, gout, neuralgia, dropsy, or a dozen other of the worst scourges of the race.—*Hort. Times.*

Many artificial flavouring extracts are used in foods and drinks, such as amylic valerianate, amylic butyrate, propylic ether and caprylic alcohol, which imitate the odour and flavour of the apple, the pear, the pineapple, the strawberry and the raspberry. These substances have been tested by two French chemists, who find them poisonous in considerable quantities, but harmless in the usual small doses.

Fruit Reports.

FROM SCOTLAND.

Sir,—The crop of apples this year in England and Scotland will be very small, owing to the severe drought, and our reports from the Continent indicate they are in a similar position to ourselves.

Under these circumstances we shall have to rely mainly upon supplies drawn from your country and Canada. Therefore the prospects that good steady prices will be made during the season is assured.

The qualities most in demand here are Newtown Pippins, Kings, Bald-

wins, Greenings, Spys and Spitzenburghs if the size, color and condition are right, we have no hesitation in stating, that we shall realize in Glasgow higher prices than is usually obtained in other markets. Yours respectfully,

BOYD, BARROW & CO.

64 South Albion Street,
Glasgow, Aug. 27th, 1887.

FROM LONDON, ENG.

By Cable to the "Canadian Horticulturist."

Messrs. Pitt Bros., Grocers, Hall Court, London, Eng., cable us as follows, under date 17th ult. :—

"No Canadian apples arived. Sound American, 17 to 21 shillings. We recommend shipments of the very best selected apples, free from spots. Market high—sound fruit inquired for."

FROM LIVERPOOL, ENG.

J. C. Houghton & Co., of Liverpool, under date of 30th August, 1887, state :—"We have delayed until the present, issuing our annual report on the prospects of the English apple crop, in consequence of having been unable sooner to obtain authentic information.

Advices received up to the present from 79 different parts of the country, report the crop

in 23	districts	to be	"average,"
in 24	"	"	"plentiful,"
in 9	"	"	"medium,"
in 23	"	"	"very light" or "under average."

From this information we may reasonably draw the conclusion that the crop is below an average one.

Owing to the very severe drought that prevailed in this country during the months of June and July, there is no doubt but the fruit suffered severely, as in 23 districts it is reported to be very small; in 24 districts the reports say that it is still falling from the trees; and in many districts a large proportion is suffering from maggots. From only three or four districts is the fruit referred to as being of even fair or good size.

We may therefore safely assume that not only will the crop be under average, but that the fruit generally speaking will be very small and poor. This being the case we look forward to a good demand during the season for American and Canadian fruit of good size and quality. We would however advise our friends most strongly, to avoid shipping small or common fruit, for it is quite evident that with this class the home crop will most strongly compete, and for such, poor results are almost certain.—*Trade Bulletin.*

THE "SNOW APPLE" (FAMEUSE) IN PHILADELPHIA.

SIR,—There are no snow apples on the market yet, but such as Gravensteins, Kings, &c., sell now at $2.50 per barrel, for best fruit. Choice Snow apples always sell higher, and if fancy would now command $3.00 per barrel. But it is likely prices may rule up ere you can put the fruit here.

Yours truly,
PANCOAST & GRIFFITHS.

FROM LONDON, ENG.

SIR,—We are looking forward to a good demand here for Nova Scotian and Canadian fruit, as our own crops is suffering very much through the dry season and the maggot.

Yours truly, G. R. HILL.
Borough Market, London, Eng.

A SHIPMENT OF PLUMS TO MONTREAL.

A lot of 21 baskets of plums was shipped from the vicinity of Owen Sound to a firm in this city recently which sold at 50c. per basket, and was considered a good sale. The express charges, however, were $8.00, which left $2.50 for the 21 baskets or not

quite 12c. per basket. By the time the shipper receives his account sales, he would be apt to conclude that there was no profit in expressing fruit to this market.

FRUIT EXPORTS.

STATISTICS FURNISHED BY WM. J. FLETCHER, OTTAWA.

Fruit of all kinds (green) produced in and exported from Canada :—

		Value.
Fiscal year ending June 30,	1877,	$194,942
" " "	1878,	149,333
" " "	1879,	157,618
" " "	1880,	347,166
" " "	1881,	645,658
For 5 years; 1877–81.....		$1,494,717
Fiscal year ending June 30,	1882,	$540,464
" " "	1883,	499,185
" " "	1884,	173,048
" " "	1885,	635,240
" " "	1886,	499,598
For 10 years, 1877–86.....		$3,842,252

N.B.—Of course the heavy crop of 1886 does not show in this table.

APPLE CROP OUTLOOK IN U. S. FALL OF 1887.

In many fruit growing sections the apple crop will be almost a failure, and nowhere is there a fair prospect of an average crop. In New England, where earlier reports were most promising, we now hear of marked declines in the prospects, and though present indications are more favorable there than anywhere else the crop can average only medium. A few localities in New York and the New England States promise good quality fruit, but the general tenor is to the contrary. Present approximate averages of the principal States are :—New York, Rhode Island, Connecticut, Massachusetts, 86; Maine, Vermont, Michigan, 74; Pennsylvania, New Jersey, Virginia, Kansas, Missouri, Wisconsin, Minnesota, 53; Ohio, Illinois, 30. Taken as a whole the prospect is for a crop below medium quality and one of the shortest on record. Yours, etc.,

PANCOAST & GRIFFITHS,

Sept. 20, 1897. 122 Dock St., Philadelphia.

Forestry.

SOME OF THE NEWER ORNAMENTAL TREES.

By favor of Mr. Thomas C. Meehan, of Germantown, Philadelphia, we are able to show our readers the excellent illustrations of some of the newer evergreen and deciduous trees used under the above heading, in this, and in the succeeding number of the *Canadian Horticulturist.*

If there is one point, more than another, to be aimed at in the laying out and planting of pleasure grounds, it is to secure a pleasing variety. Monotony tires the eye, and shows a lack of taste. Many of our public parks, school grounds and private lawns are sadly at fault in this respect. It would almost seem as if there were no deciduous trees in existence, except the hard and soft maples, and no evergreens with which to cheer the barren landscape in winter except the Norway spruce.

And in the planting of evergreens how little judgment is shown in selecting kinds suitable to the size of a lawn! A Norway spruce is often planted in a little door yard twenty feet square. At thirty years of age its branches extend from ten to fifteen feet in every direction, and rob the owner of every foot of his lawn, unless prevented by the most vigorous pruning.

Among the pines, the Scotch and the Austrian have been considerably planted in Ontario, and although these are slow growers and dwarfish, when compared with our Canadian natives, they are coarser in foliage, and hence less ornamental. In the

SWISS PINE *(Pinus Cembra)*

THE UMBRELLA PINE.

we have one which combines, in an unique manner, small stature with great beauty of appearance. Though in high elevations of the European Alps, where it is indigenous, it sometimes attains a height of one hundred feet, we have real of no specimens in American gardens reaching more than twenty-five feet, and that with very slow growth. The tree is pyramidal in outline, and the color is silvery green. The seed is edible, and that collected from a variety in Russia *(var. Sibirica)* is sold in the groceries, and much relished by the peasants.

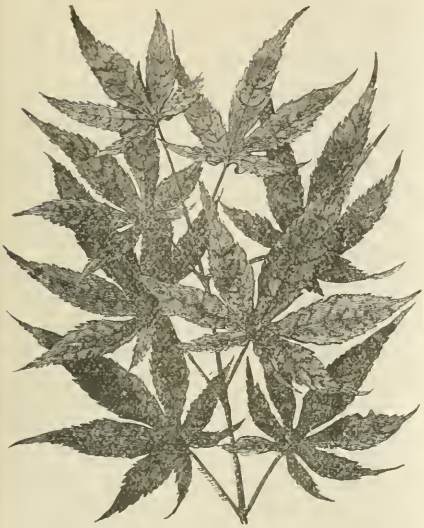
THE UMBRELLA PINE

is a novelty from Japan, and is known botanically as *Sciadopitys Verticillata.* As it has only been in cultivation for about twenty-five years, and is very difficult of propagation, and slow in growth, it is as yet very rare and costly.

A valuable addition to the already large number of kinds of maples cultivated for ornament in America, has been made by the introduction of a dwarf species from Japan, some twenty-seven years ago. Its technical name is *Acer polymorphum,* and from it many beautiful varieties have arisen. Probably the best of all is

THE BLOOD-LEAVED JAPAN MAPLE

(acer polymorphum atropurpurea). The foliage, early in the season, is light red, later it becomes darker, while the second growth bears leaves resembling the earlier ones. Another interesting Japanese variety is *A. Japonicum aureum,* with rich yellow foliage, form a fine contrast to the former. Besides these there are three or four other



BLOOD-LEAVVED JAPAN MAPLE.

varieties. Mr. Meehan says, "There is no prettier sight than a large bed made up of the different varieties of Japanese maples. They will set off and contrast with surrounding plants better than any other class grown, having at the same time richness possessed by no other tree. Several large plants of the Blood-leaved Japan Maple, growing around Germantown attract wide attention, being the admiration of all who see them."

TREES AND RAINFALL.

Scarcity of rain, which was the cause of so much loss to the agriculturists in some parts of the North-West last year, is a phenomenon not peculiar to Canada. President Adams, of Cornell University, in a recent address, points out that the removal of the trees, centuries ago, reduced the fields about the Mediterranean to sterile deserts. The same process is going on across the line. President Adams says: "The trees are being swept away, and what is the result? The rainfall has been diminished, the showers which heaven may still bounteously furnish, instead of being welcomed by the soft verdure of forests and cultivated fields and lovingly kept in the soil for the good of all animal and plant life, is repelled by parched hillsides, so that it shoots off in angry torrents and is soon once more in the lakes and the great rivers and the oceans beyond. Thus, by a perfectly explicable method our climate is undergoing a certain change, and it is the change which, in some of the regions of the Old World, has caused the sand to drift over regions that were once the homes of a prosperous people." He adds: "And yet there is no tendency of nature that is more amenable to the influence of man's appreciative intelligence. Everybody remembers Emerson's allusion to the ability of the English, by the planting of trees on the borders of Egypt, to bring rain again after a drouth of 3,000 years. We have been doing the same thing in the West; for they tell us that the planting of trees and cornfields in Kansas and Nebraska, up to the very frontier, has already pushed the rain line further West by more than a hundred miles." —*Mail.*

CO-OPERATIVE fruit and vegetable evaporating and preserving establishments are bound to be a feature of our farming in the future. This industry is particularly adapted to sections not convenient to good markets. There is money in it for the proprietors of evaporators, and there must be still more for the patrons when the business is run on the co-operative system. Read all that is said upon this subject and act upon it. The co-operative fruit and vegetable utilizing factory is a very simple affair compared to the creamery system, which has proved so successful. —*F. & H.*

Flowers.

CULTIVATION OF THE NARCISSUS.

BY H. SIMMERS, TORONTO, ONT.

(Continued from the last number.)

THE next most useful variety for forcing is the Polyanthus Narcissus, or Many-flowered Narcissus. This species is the one best adapted for house culture, and for the

THE NARCISSUS.

amateur to have blooming during the winter months. The flowers are beautifully scented, and remain in bloom from four to six weeks. The house culture is exactly the same as that under the heading of hyacinth. The varieties that give most satisfaction are Grand Monarque, white, with yellow cup; Staten General, yellow, with white cup; Bazelman Minor, yellow, gradually shading to white; Grand Soleil D'Or, golden yellow, exceedingly handsome. These are probably the varieties the most used, the world over, for forcing. Many other varieties are generally listed in the bulb catalogues, but I do not claim they will produce such handsome spikes. If any person requires a larger selection, try an assorted lot intermixed with the others for winter bloom. Planting Polyanthus Narcissus this month, you cannot expect them to flower until February or March; but in spite of the time it takes them to flower, do not delay in starting the bulb, for, as I have previously advised, the longer they remain in the dark the better rooted, and as a result the flower spikes will be larger.

Jonquils, double and single, are allied to the Narcissi, and are natives of the south of Europe. Perfumed waters are made from Jonquil flowers, giving the impression to the reader that they must be very fragrant. Either the double or single Jonquil is well adapted to open-air culture, and may be treated in the same manner as the Narcissus, except that the bulbs being smaller they are only planted three inches below the surface of the ground. They are easily forced, and if planted this month they will flower by Christmas. Being cheaper, they should be tried by every amateur. The Chinese Narcissus is a variety I overlooked to mention under head of Polyanthus Narcissus. This is the sacred flower of China: nearly every shop in the Chinese cities has these bulbs growing in a saucer of water and pebbles. They throw up several flower stalks, thickly studded with bloom, white, with yellow centre. The bulbs are of a whitish appearance, thus differing from Polyanthus Narcissus in that they have a dark brown skin. Many charitable ladies around Toronto have sometimes received presents of this variety from the Chinese located here, for charitable services rendered to them; and they have frequently wondered what the name was, the Chinaman being able to explain the culture, but not the name.

This is, then, the variety generally received. I would here remind the readers that may have followed some of the descriptions I have written, that this is the proper month for starting the various kinds of bulbs I have written about, both outdoors and indoors, and that they should not wait until November and December, with the usual result, viz., disappointment in not getting any bloom for all their trouble. The reason is frequently attributed to the bulb being poor, but the correct reason is that the tender flower stock, encased in the centre of the bulb, has been so dried up that it comes up along with foliages and gradually withers away; or perhaps the side shoots only may have grown, thus frequently disappointing the most careful cultivator.

THE VIRGINIA CREEPER.

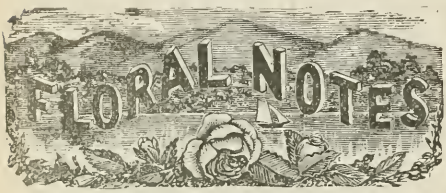
BY J. P. COCKBURN, GRAVENHURST, ONT.

IN our later years we are carried back in thought to our early days, and reflect with pleasure on the many pleasant moments of rest and recreation we have had, under the vine-covered bower. No villa, or rural house, can be complete without the wondrous charms of the trellis or arbor, so suggestive of taste and comfort, yet one may travel many miles through some of the finest agricultural districts in Canada, without seeing the slightest attempt at decorating the house of even the wealthy occupant. The great bare pillars of a verandah stand up in the glare of the sun, or seem to shrink before the blast as it drives along the floor of the naked porch, seldom trod by occupants of the dwelling because there are no attractions to visit the bleak and dreary waste. The work of the farm and the business of the estate is arranged in the "back parlor." Farmers frequently say they have no time to waste in planting trees or decorating their grounds, and many do not assist their wives to make even a sort of excuse for a kitchen garden. To such people as I have in my mind I say, take at least one or two days with the boys and team, secure *any sort* of forest trees, let them be small with plenty of fibrous roots, and plant them carefully, and fill up the odd places about your house with them. If you have no design, put them in clumps in the corners, and along the lane. They will soon grow, and nature will adjust them to the situation, *but let us have the trees.*

Dig large and deep holes about your verandah in which plant Virginia creepers; the holes should be partly filled with a mixture of decaying chips from the woodshed, and filled with good earth. The woodshed should be partly covered with the same vines. Nothing has a finer effect than a few well-grown Virginia creepers trained to the verandah and side of the house, and all unsightly buildings are soon transformed to a thing of beauty. Vines seem to thrive best when they can get hold of some decaying substance, and they take up much of the miasmatic vapours about outhouses. I need not say how much this will in a short time add to the beauty and comforts of home, and the joy of our children, the envy of our dilatory neighbor, and the delight of every passer by. There is no outlay of capital, if you can find the vines growing wild in some low rich bottom land on your own, or on your neighbor's farm. If not, you can obtain them for a nominal sum from any nurseryman. They propagate as easily as currants. For small villas and city residences, where the grounds are limited, the *Ampelopsis Veitchii* is preferable, having much smaller foliage and does not require the space which the Ampelopsis Quinquefolia does.

Remember that a ten-year-old vine, well grown, will cover 1,000 square

feet, and that you may mistake Poison-Ivy for the Virginia Creeper, which has five leaves, while the Poison-Ivy has only *three*. They are generally found in the same locality. This discovery cost the writer two weeks of almost total blindness, and sleepless nights of pain, as well as several dollars for doctor's medicine. Five leaves, remember, and you are safe. October is the best month to plant.



By Francis Mason, Peterborough, Ont.

BULB PLANTING IN THE FALL.

It is not yet too late to prepare a bed and put in hyacinths, tulips, crocus and other hardy bulbs for spring flowering. Even if the ground has frozen over a hole, may be forced with an iron bar large enough to admit the bulb. After putting in, cover with coarse manure, leaves, or rubbish of some kind, which may be raked off early in the spring.

IRIS.

Do not forget to plant a few bulbs of the English and Spanish irises. They are beautiful, cheap and easily obtained. They flower early in the following summer.

HARDY LILIES,

such as L. Candidum, L. Auratum, L. Rubrum and all this class of hardy lilies, may still be moved, and planted in good rich soil in permanent place. It is not well to disturb too often. On the approach of winter, cover with coarse manure or some other suitable material.

OUT-DOOR ROSES,

such as Hybrid perpetuals, climbing or moss roses should be laid down and covered over with moss, leaves or earth. They will well repay all the trouble next June.

CHRYSANTHEMUMS

if planted and not yet taken up should at once be taken up, potted in good rich soil, and kept out doors as long as possible, covering on frosty nights. Do not allow them to flag for want of water.

CARNATIONS

make fine flowering plants for the house if taken in now. Cut nothing off unless the old flower pods are still on.

WINDOW GARDEN.

Under this head all flowering plants. vines or foliage plants are embraced, Overcrowding should be avoided, though many more may be kept in a window at the start. Later on, as they grow and expand, more room must be given. Watch for the first approach of the mealy-bug and aphides, and if atmosphere is too dry the little red spider will appear on the under part of fuchsia and rose leaves, but a good syringing of parts affected will have the effect of dislodging those troublesome guests. Nearly all flowering plants thrive best exposed in a south or east window. Some will do with little or no sun, such as Begonia rex, English and German ivies and others, which a little experience will soon find out. It is not necessary to repot plants oftentimes, for instead, a regular course of feeding them with some good plant-food prepared for that purpose, or if nothing better is to be had take a teaspoonful of spirits of ammonia, dilute in a pint of water and give a little twice a week. Temperature should be about 50 or 55 at night and 60 or 70 during the day. Greater heat will have a tendency to make a weak sickly growth that will produce little or no flowers.

PANSIES

require a different kind of protection from many other plants. The covering

placed on bulbs or roses would smother these comical-faced fellows right out. A slight covering of leaves with a few branches to keep the wind from blowing them away, will be best. Branches of hemlock or spruce are about the best unless they may be in a cold frame, in which case the sash may be over them and a few boards over that again.

GLADOLI AND DAHLIAS.

If not already housed attend to them at once. They should be well dried; the first-named may be placed in paper bags, and hung up in frost-proof closet or cellar. The dahlias will do wherever potatoes will keep nicely.

PETUNIAS, STOCKS, &c.

For flowering in the house during winter take up a few old plants of Petunias, ten week or Crompton stocks; cut away a good quantity of the old wood, especially the petunia, and pot in nice rich soil and place in a sunny window.

OLD GERANIUM PLANTS

that have been flowering during the summer will now, if taken in, cutting away some of the old growth according to the size, flower nicely during the winter.

HURRY IN THE SPRING

may be avoided to a great extent by preparing the beds in the fall by digging in a liberal quantity of well-rotted manure, spent hops or leaves. Beds thus treated are much better than if left till spring.

A CARD.

To the Subscribers of The Canadian Florist and Cottage Gardener.

For more than a year past I have found that my business as Seedsman and Florist was increasing so rapidly that to make it a complete success I must devote my whole time to it, and I have therefore made arrangements that the *Canadian Horticulturist* should be sent for unexpired term to the subscribers of the *Canadian Florist and Cottage Gardener*. I trust that at the end of the year, or before, all the friends and subscribers of the *Canadian Florist* will become permanent subscribers to the *Canadian Horticulturist*, for which magazine I will, under the heading of "Floral Notes," contribute monthly such matter as will, I trust, be helpful to its readers. Any questions that may be asked or information wanted in the care or treatment of plants will be gladly answered by me in this department, and I intend to do all in my power to make the *Horticulturist* the best magazine of its class in America. FRANCIS MASON.

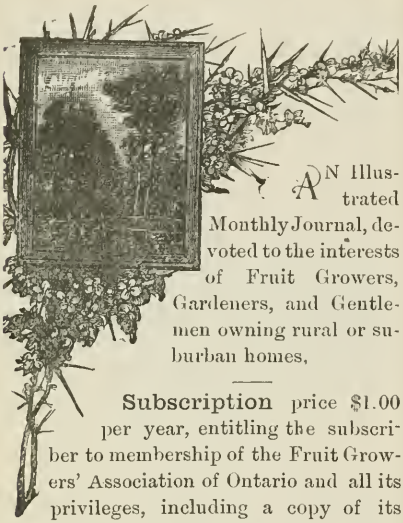
Peterborough, 14th Sept., 1887.

TO THE SUBSCRIBERS OF THE "CANADIAN FLORIST."

It is with pleasure that we greet the friends of the *Canadian Florist*. In sending you the *Canadian Horticulturist* for the balance of the year we hope to amply fill up the contract you have made with the former paper. In the meantime we hope to so merit your good will, and to be so useful to you all, that whether you grow fruit or flowers, you will wish to have this journal continue as a monthly visitor to your homes.

Another Noted Pomologist has passed away. On Thursday the 8th of September, Charles M. Hovey, died at his home, at Cambridge, Mass., at the age of seventy-seven. Hybridization of flowers and fruits was a favorite occupation of his, of which the Boston Pine, and Hovey's seedling strawberries are instances. He is also well known as editor of the *Magazine of Horticulture*, which he founded in 1835 and conducted for a period of thirty four years. He was President of the Massachusetts Horticultural Society from 1863 to 1866 inclusive.

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.

The Horticultural Show at the Industrial Exhibition, Toronto, was in some respects most creditable. The Floral Hall was lighted with electric lights in the evening, and the display of greenhouse plants was profuse and arranged in good taste. But the fruits, especially the apples and pears, were put aside in canvas tents, which were miserably lighted in the evening.

One great fault in this department was the lack of proper labels for the different varieties of fruits and flowers shown. To make a show of fruits profitable to the visitor it is all-important that the names should be clearly seen, and thus a knowledge of excellent varieties widely diffused throughout the country. A few plates of fruits were properly labelled by means of the wire support which lifted the label above the fruit so that it could be easily seen, and where printed in large type the name was easily read, without stooping. But, in most cases, the labels were either pasted on the fruit, or written in a most illegible style, on a slip which was dropped on the plate, and hidden beneath the specimens.

The same defect was observable in the exhibit of flowers. It was only by searching that the amateur could succeed in finding the specific names, nor would the search be in every case successful. Now it is surely not too high an aim for such exhibitions to endeavor to educate the public concerning the names and groupings of choice plants, and we would suggest the use of plainly printed labels of the varieties shown, and these conspicuously placed for the benefit of all. These should be provided by the Directors, all uniform in style, and each exhibitor obliged to use them.

Prof. C. H. Bessy, in *American Agriculturist*, says we should put the study of soils, plants, animals, air and clouds, &c., into our schools. The farmer's profession is about the only one for which the man is not specially prepared by study or training; hence when he meets with grasses, poisonous weeds, smuts, rusts, insect foes, &c., &c., he is wholly ignorant of the objects before him. Certainly the Professor has the right of it, and we are glad to notice that Prof. Mills, of Guelph Agricultural College, advocates an improvement in this particular in our Canadian schools.

Don't allow the weeds to ripen their seeds. Just now the ugly ragweed *(Ambrosia bidentata)* and the Common Burdock *(Lappa major)* are maturing

their seeds for another year of mischief. And, of all weeds, these two are among the most unsightly. We hate the latter worse even than we do the Canada Thistle, and think it almost as persistent in self-propagation. Most people cut it when it is in bloom, but in our experience it pays best to wait until September, when the seeds are nearly matured, for then it may be cut and piled for burning, and so destroyed. If cut too early it throws up numerous sprouts, which are more difficult to cut than the original stem.

Protecting Crops in time of Drouth.—A writer in the *Horticultural Times* makes some sensible remarks under this head. He gives four available means for accomplishing this end which is so desirable in such a season as the one just past, viz.: (1) *thorough underdraining*—which encourages the roots of plants to push down deep in the soil below the dry surface soil; (2) *deep ploughing*, and thorough cultivation; (3) *application of wood ashes* at rate of fifty to one hundred bushels per acre; (4) *extra cultivation* during the hot weather.

Transplanting Large Trees.—Mr. Thos. Meehan, of the *Gardeners Monthly*, says it is not at all necessary to remove a large ball of earth, in transplanting large trees. His plan is to "dig out far enough from the trunk to get the feeding roots, and go deep enough so as to get under with forks, so that the tree can be easily drawn over by its own weight. A two wheeled cart is then backed up to the tree, the trunk lashed to the shafts to be used as a lever, and the job is soon done." By this means a tree 20 feet in height, and a foot or more thick can be moved several miles for a few dollars.

The Decease of John B. Moore the well known Massachusetts horticulturist, is announced in the September number of the *American Florist*. He died at his home, in Concord, on the 21st of August last, at the age of seventy. Hardy roses and grapes received special attention from him, and his Moore's Early grape has made his name famous far and wide.

Mr. Moore has been a prominent member of the Massachusetts Horticultural Society since 1849, and was President of that Society for the year 1885.

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.

68. Empire State Grape.—*Can you give me any points on the Empire State Grape?* J. H. MORRISON, Hamilton.

A colored frontispiece of this grape, with a description, may be found in this Journal, Vol. VIII., p. 97. It is a hybrid of Hartford Prolific and Clinton. The bunches are large, shouldered; berry smaller than Niagara, but by many considered better in quality. The vine is vigorous and hardy, so far as tested.

69. The Currant Borer.—*Is there any remedy for the grub that eats the pith of the red currant bush? How does the varmint get there, and what is its origin?*

See the *Canadian Horticulturist* for January last, p. 15, for full description, with remedy.

70. Oyster Shells as a Fertilizer.—*I have quite a quantity of ground oyster shells, more than I can use for fowls; would grapes, currants, &c., be benefited by its application; soil, a sandy loam on top of a clay subsoil?*

STANLEY SPILLETT, Nantye.

REPLY BY J. H. MORTON, WINGHAM.

No appreciable benefit, unless first calcined, as the lime contained in the shells is their chief value, the very small proportion of phosphoric acid is not in a condition immediately available as plant food. Being powdered, calcining will be difficult, and if any other economic purpose can be found for them, we would not advise their use as a fertilizer, as the same quantity of available plant food can be supplied at less trouble and expense.

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.

A. B. C. of Bee Culture. A Cyclopædia of everything pertaining to the care of the honey-bee. By A. I. Root. Medina, Ohio, 1887. Price, $1.25.

A book of over 300 folio pages, and containing about the same number of excellent illustrations. The subjects are all treated in a complete and systematic manner, and are arranged alphabetically, so that a person needing information on any subject connected with bee culture, can immediately turn it up, without the loss of time which is incurred in looking through various books and papers.

Smithsonian Report. 1885. Part I. Being the Annual Report of the Board of Regents of the Smithsonian Institution, showing the operations, expenditures and condition of the Institution to July, 1885. Also,

The Transactions of the New York State Agricultural Society. 1882 to 1887.

Both these volumes came through the Smithsonian Institution.

Guelph Scientific Society. Report of the Secretary for the first year (1886), with an abstract of papers read at the regular meetings. James Goldie, President; Robt. Gansby, Corresponding Secretary.

CATALOGUES.

Fall Catalogue of Rare Bulbs, Plants and Fruits. 1887. John Lewis Childs. Floral Park, Queen's Co., N.Y.

Descriptive Catalogue of Northern Grown Fruit and Ornamental Trees grown by J. H. Wismer, at his nurseries, in Port Elgin, Ont.

Humorous.

Guest (rising excitedly from the table, after tasting an olive for the first time), "It's sorry I'd be to disturb the hilarity of the meeting, but I believe some joker's been salting the gooseberries!"—*Judy.*

"Speaking about the artist who painted fruit so naturally that the birds came and pecked at it," said the fat reporter, "I drew a hen that was so true to life, that after the sage threw it into the waste basket, it laid there."—*Peabody Reporter.*

A Washington lady, was canning and pickling peaches, and her little two-and-a-half-year-old daughter was endeavoring to assist her in every available way. Finally a package of whole cloves was produced, which were to be inserted in the fruit for spice, when the little one suddenly exclaimed: "O mamma, let me put in the tacks!" —*Farm and Fireside.*

"Sam, you are not honest. Why do you put all the good peaches on the top of the measure and the little ones below?" "Same reason, sah, dat makes de front of your house all marble and de back gate chiefly slop bar'l, sah."

O This the apple, large and round,
That always on the top is found.

O This is the apple, small and mean,
That's often at the bottom seen!

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GRIMES' GOLDEN.

The Canadian Horticulturist.

PUBLISHED AT TORONTO AND GRIMSBY, ONT.

OFFICE ADDRESS—GRIMSBY, ONT.

VOL. X.] NOVEMBER, 1887. [No. 11.

NOVEMBER.

The year is waning! Solemn sounds are heard
Among the branches of each wind-toss'd tree;
Brown looks the grass; no floral gems we see;
Forsaken nests by winds alone are stirr'd,
And not by wing of bird.

The skies look cold—wind-driven clouds scud by,
While fitful gales whirl sere, dry leaves away;
Fair once, like friends who come to us one day,
Creep to the heart, bring love-light to the eye,
Then droop and fade and die.

Yet, while winds chill and summer joys depart,
A host of other pleasures now doth come:
Brothers and sisters scattered, all come home,
Thanksgiving cheer abounds, while fond smiles start.
As heart responds to heart.

Then curtains down, around the fire we press,
To sing and jest, to romp and laugh, and play;
But while the fun goes round, each heart can say,
"November brings Thanksgiving. Lord, we bless
Thee for our happiness!"

Brooklyn Magazine.

THE GRIMES GOLDEN.

OUR FRONTISPIECE this month represents that excellent winter apple sent out some years ago by the Fruit Grower's Association of Ontario, the Grimes Golden Pippin. Several samples of this variety were on exhibition at the Industrial Exhibition, but none of them as large as the one shown in our illustration; indeed we question if any of our readers have succeeded in growing it much above a medium size.

Grimes Golden is no novelty. It has been known for many years, having originated on the farm of THOMAS GRIMES, near Kempsville, Virginia. It is highly esteemed for its excellence of quality, in which respect is is compared in value with the Newtown Pippin, an apple that always commands the highest price in the English market on account of its delicious flavour. The tree is vigorous and productive, especially in alternate years, and the

rich golden yellow of the fruit, renders it peculiarly attractive.

Notwithstanding all its excellences, however, it is not considered a very profitable apple in Canada, neither can we recommend it for the more northerly sections, as its hardiness is in question, and it is classed by Dr. Hoskins among the varieties that will not endure the climate of Vermont.

Two years ago, Mr. McD. Allan said of it, at one of our meetings: "It is a magnificent apple for the dessert table, and there is nothing prettier when arranged in a dish than they are; they are gold just now. Nevertheless they are not profitable to grow."

Profit however is not the only consideration in growing apples. Very many of our readers want a selection of kinds solely for home uses, and with them quality and general excellence is the test. Such persons will be much pleased with Grimes Golden. It will contrast beautifully in the dessert dish with other varieties, as for instance with the deep red of the Fameuse.

THE ANNUAL MEETING.

THE recent meeting at Grimsby was one of the most interesting ever held. The members of the Fruit Growers' Association at Grimsby turned out in full force to welcome their visitors, and did everything in their power to make the meeting successful.

They had arranged tables across the hall, in front of the platform, for the display of new and choice varieties of fruits; and these were loaded with the finest possible display of apples, pears, and grapes, a full report of which will appear in the next Annual Report of the Association.

The result of the

ELECTION OF OFFICERS

was as follows:—*President:* A. McD. Allan; *Vice-President:* A. M. Smith; *Directors:* Agricultural Division No. 1, John Croil; No. 2, A. A. Wright; No. 3, Rev. Geo. Bell, LL.D.; No. 4, P. C. Dempsey; No. 5, Thos. Beall; No. 6, W. E. Wellington; No. 7, M. Pettit; No. 8, A. H. Pettit; No. 9, Fred. Mitchell; No. 10, J. A. Morton; No. 11, J. M. Denton; No. 12, Albert Hill; No. 13, G. Caston. *Auditors:* Jas. Goldie and Chas. Drury, M.P.P.

The Treasurer's Report was read, which showed a balance in the bank to the credit of the Association of nearly $500; thus showing that notwithstanding some unavoidable losses, the finances are now in a prosperous and hopeful condition, making it possible to carry out in the near future many plans for the improvement of our monthly journal, and the increased usefulness of our Association.

THE EXCURSION AMONG THE FRUIT FARMS

was highly enjoyed by all, notwithstanding the dust and the smoky atmosphere which circumscribed the many beautiful and picturesque views here obtainable. The first orchard and fruit farm visited was that of the Secretary, of which it becomes others, rather than the writer, to speak, except

to say that henceforth it will be used largely as a source of experience in practical horticulture, for the benefit of the readers of the *Canadian Horticulturist.*

The magnificent Pocklington grapes on Mr. E. J. Woolverton's fruit farm, were much admired. Grown on a rich sandy loam, well drained, they ripen here to perfection, about a week later than the Niagara. His beautiful orchard of dwarf pears, chiefly Duchess, with some trees bearing superb looking B. de Beaufort, was also much admired. As with the rest of us at Grimsby, his large peach orchard has been sadly thinned out by the yellows, the presence of which disease he still deplores.

At Mr. Murray Pettit's vineyard, near Winona, the whole party alighted, and were refreshed at his packing house with a taste of his pure home-made grape wine, which was not the less appreciated, after being half choked with clouds of dust upon the way. This vineyard is one of the largest in this section, and is situated close under the mountain, where it is sheltered from early frosts, and where the soil is a rich sandy loam, gathered during past centuries by the washings from the mountain side. Although the Delaware has always received special attention from Mr. Pettit, he has some sixty or seventy other varieties under cultivation, with a view of testing their merits. With many others, however, he has come to the conclusion that the number of varieties which are really worthy of a place in a vineyard which is planted for market, are very few, as for instance (white) Niagara, (black) Concord,and Rogers' 4 and 44,(red) Lindley, Worden, Delaware and Agawam.

Returning along the mountain brow, Mr. A. G. Muir's vineyard of Niagara grapes was much admired. His success proves that not all the most favorable locations for vineyards are to be found below the mountain, as many would affirm.

The drive east of the village two miles to the Park, was also full of interest. Fine houses, and well kept gardens, line the road, and betray the good taste of their occupants. The Park, too, is growing in attractiveness; how could it be otherwise, situated as it is on the bank of such a beautiful lake, and in such a delightful section of country.

THE PUBLIC MEETING

of Wednesday evening was a grand success. The Town Hall was packed. The address of Mr. A. McD. Allan was full of special interest to fruit growers; while that of Prof. Brown, on "Trees and our Every-day Life," clearly showed the great importance of forests to the prosperity of any country.

The music, contributed by Miss Katie Nelles and others, of Grimsby, was excellent, and added very much to the enjoyment of the evening's programme.

The full text of the President's address will appear in our next Annual Report, together with a report of the important discussions of Thursday, taken down verbatim by an able stenographer. Suffice it therefore to say

that this meeting at Grimsby was acknowledged to be of interest and profit to all, and was the means of increasing the fraternal feeling between the Ontario Association and a strong local organization of fruit growers.

SELECTIONS FROM THE PRESIDENT'S ADDRESS

Delivered at Grimsby, Wednesday Evening, 28th September.

HONEST PACKING.

Our apples have taken the British buyers by storm, and consumers there will not purchase any others so long as they can obtain a suitable article from us. Britain wants the best and the best only. There is no better market for a choice article, nor so poor a one for an inferior article. Canada has gained a good name for general honest culling and packing, and it is absolutely necessary that we do not allow a spot to tarnish our character. I would entreat every orchardist and shipper, not only for his own best interests but also for the sake of the fair fame of our country, to exercise the greatest care in the cultivation, selection and packing of our fruits. Let the grower leave nothing undone to excel in the production of the choicest fruits, and when he ships allow nothing to pass to the shipper but the best. Above all things teach your children to be scrupulously honest in picking and culling out the apples ready for packing. Never encourage a child to think it smart to get a spotted or wormy apple off on the buyer by hiding it in the middle of the basket or barrel. Let the shipper see to it also that he acts in strictest honesty with his customers. Let the brand always truly indicate the contents of the barrel. Let every specimen be sound and clean for a good brand of fruit. Choice lots should be made of even size and good colour in the barrel. Under no circumstances let the brand indicate anything better than the fruit in the barrel fairly demands.

SHIPPING.

Generally speaking, it is a mistake to ship on consignment to any but the three great distributing centres, London, Liverpool and Glasgow. Experience has shown that fruit shipped to London direct by water has received much more damage in transit than when shipped *via* Liverpool and thence by rail to London. It is a very common thing to find in cargoes shipped direct to London by water, barrels with only a few pecks in them, and as these few left are clean, fine samples, it is natural to conclude that they have been tampered with either when passing up the Thames, or when in charge of the dock companies. I have often visited the docks to see cargoes discharged, and almost always remarked an amount of careless handling that was startling —barrels of apples standing in the storage sheds open, and passers-by having every chance to pilfer that could be desired. I would therefore advise shippers to ship to London always *via* Liverpool.

MARKET FOR FALL APPLES.

There is still another market nearer

home that will prove one the most important to Ontario growers, viz., our own great North-West. Even now, with population small and scattered, the trade has assumed wonderful proportions, with this very desirable feature, that it is a market for our early and fall apples, that would otherwise be of comparatively little value. Of course, there are some fall apples that we can ship to Britain profitably under some circumstances. Of fall varieties we have one that is sure of ready sale at high prices—the Gravenstein—even this season it has sold as high as $6 per barrel. St. Lawrence has made $4.20 and Colvert $4.05 for good samples.

ORDER OF SHIPPING WINTER APPLES.

It is folly to send a mixed cargo at an early season, as there is then no proper demand for a long-keeping kind. Shipments should continue through winter until early spring. In such a season as the present the order in which special kinds should be shipped would be thus :—In September and first week in October, ship all 20-Ounce and Ribstons and Blenheims; follow this with Kings. Send some Baldwins and Greenings through November and December, finishing shipments of these kinds in January. The first Spies should be sent forward in December, and continued on through January into February. Ontario and Wagner will also cover the same season. Hold the Russets until March if possible, along with Mann, and send them forward then as the demand arises, taking care to examine every barrel before leaving the storehouse to see that there is no decay or shrinkage.

SHIPPING GRAPES.

The large grape crops of the present season, and the exceedingly low prices causes the growers to ask what are the prospects of obtaining markets for an increasing supply? If proper cold storage can be secured on the steamships, Britain will soon prove to be a good market for our open-air grapes. But as the taste for them must be acquired, largely, such a trade must be approached with care. The only class of grape consumers in Britain are those who can afford to pay very high prices for hothouse varieties, and those who are satisfied with the poor quality of the ordinary Spanish white grape of commerce. I have no doubt at all but our grapes would find a ready class of consumers if once introduced in competition with the Spanish grape. Various ways of packing must be tested. Those packed in berry boxes, tightly enclosed in a case containing ten or twelve such boxes, carried better than in any other way to the Colonial at London last year.

CAUTION.

It is for the exporter to quickly decide the market to which he will consign. Caution should be used in accepting market reports mailed from broking firms, which are so worded as to induce shippers to consign to Liverpool when they should take London or Glasgow, or *vice versa*. The necessity of making arrangements well in advance with steamship agents, to avoid being shut out, must also be borne in mind.

Influence should also be brought to bear on agents in regard to storage. Apples should never be stowed under or mixed with general or any other cargo, and they should always be stowed away from all heating influences.

KEEPING GRAPES.

At the Grimsby meeting this subject was briefly discussed. Mr. M. Pettit, of Winona, said that last year, he had tried setting away *Niagaras* until December, but he found that by that time grapes seemed out of season on the market, and the demand was over.

Mr. J. B. Osborne, of Beamsville, had been successful in keeping grapes. He had filled cheeseboxes with them—buried the boxes in earth so as to totally exclude the air. In this way he had kept them till the month of February, and exhibited them at one of the winter meetings of the Association at Hamilton. The variety was the *Isabella*, and they were in a fine state of preservation.

Mr. A. M. Smith said he had showed some *Salem* grapes at Collingwood meeting last June, that had been kept by Mr. Kerman.

Mr. D. Kerman, Grimsby, said his plan was to take grapes when perfectly dry, seal the stems with sealing wax, pack them in ten gallon casks, placing in layers of fine, dry hardwood sawdust, and then layers of grapes alternately. He would give the cask frequent gentle taps on the side to settle the sawdust closely among the grapes. When full, he glues stout paper over the top, and hangs up the casks in the cellar. In this way he had kept the Salem grape in fine condition until grapes came again the following year.

The Salem, Vergennes and Pocklington were spoken of as good varieties to put away for winter use.

THE CURL OF THE PEACH LEAVES.

Miss Etta L. Knowles writes in the *Botanical Gazette* for September the result of some investigations into the cause of this disease. It is the result of the growth of a fungus called by Botanists *Exoascus deformans*. The observations were made upon samples of the leaves gathered about first week in June, and the drawings were by the aid of the camera.

In order better to understand the effect of the fungus upon the leaves a drawing of a cross section of a healthy leaf is first shown as in Fig. 1, in which *a* represents the upper and *b* the under surface. Of course it is only by

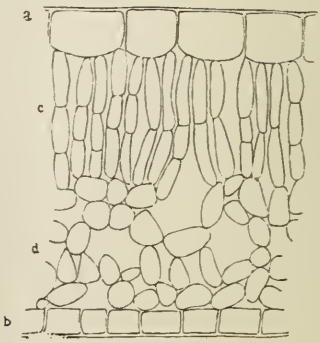


Fig. 1.

the aid of a powerful magnifying glass that any such distinction of cells can be

seen. The part marked *c* represents the thin walled elongated cells near the upper surface, and *d* the irregularly arranged cells near the lower surface, with large spaces between them.

The fungus begins as a small swelling on the tissue of the upper half of the leaf and spreads until it effects

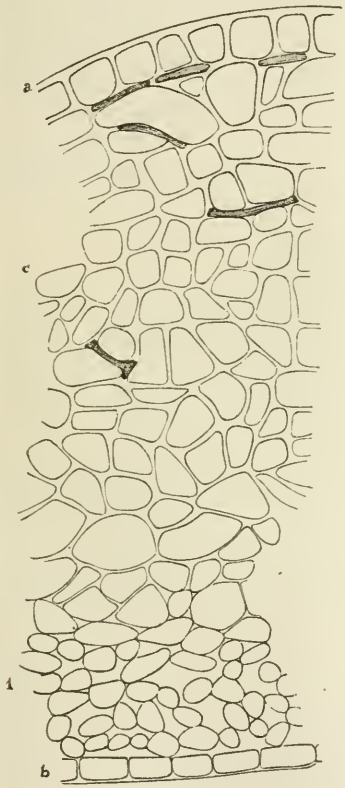


Fig. 2.

nearly the whole surface. The leaf becomes nearly doubled in width, and greatly increases in thickness, and soon after the fungus is matured the leaf shrivels and drops.

Fig. 2 shows a vertical section of a leaf thus affected and swollen out of its normal thickness. In this *a* is the upper, *b* the under surface as in Fig. 1. The cellular structure in the under portion of the leaf is very little changed but that in the upper part has changed materially. The walls between the row of cells under the upper skin or epidermis, have become much thickened; the long narrow cells have become swollen and divided, and have become nearly empty, and hence the tendency in the leaf to curl underward.

The dark lines represent the vegetative portion of the fungus, corresponding to roots. This penetrates the surface of the leaf and there forms numerous branches, each of which en-

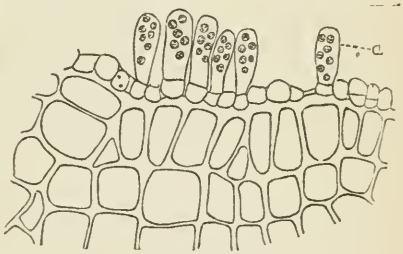


Fig. 9.

larges and forms the fruiting portion or ascus, shown at *a* in Fig. 9. In these asci the spores (or seeds) are produced, from six to seven in each, and these are the source of the constant spread of the disease.

As fruit growers we are pleased to know the cause of such a wide spread evil as the curl of the peach leaf, an evil which has been gaining ground upon us of late, and in wet seasons stripping our trees almost bare of leaves, and lessening the yield of fruit very materially. But if some one could find a remedy for us, we will be still more grateful.

NEW PACKAGES FOR PEACHES.

SIR,—The peach basket you represent, in the September issue of your interesting and instructive journal of horticulture, as being used in New Jersey and Delaware, we beg to advise you have been almost entirely superceded by modern, cheaper slat baskets and crates; for peaches it has been altogether abandoned and replaced by a similarly shaped slat basket, which costs 4c. to 5c. each.

For choice peaches, etc., the 4-quart basket crate has become very popular as a "gift package." But for uniformly large, fancy peaches the paper cell crate is growing into popular use.

The truck basket is too deep for shipping peaches in; the peaches below the third peach from the top are under too heavy pressure and become more or less bruised and mashed. The basket crate is better ventilated, and the peaches are only two to three deep, according to size of the fruit. The paper cell packages ventilates and holds separate each individual peach, which makes it most suitable for fancy delicate fruit.

Yours respectfully,
PANCOAST & GRIFFITHS.

Philadelphia, Sept. 21, 1887.

WINTER PROTECTION.

By P. E. BUCKE, OTTAWA.

As the time is fast approaching when the rigors of winter will again be upon us it is well to look ahead and profit by past experience. The practice of protection even where the winters are much milder than in the Ottawa Valley is becoming more general every year. A prominent fruit grower in Michigan says that he considers the time he spent, covering his vines in the autumn, paid him at the rate of one hundred dollars per day whilst he was so employed, in his next year's crop; and there is no doubt in my own mind he was perfectly correct in his statement. If in Michigan the best cultivators protect grapes, raspberries and blackberries, and the labor thus expended yields the amount per day as stated above, it will surely pay the fruit growers of Ontario to follow suit. I am informed that an individual who has several acres of a plum orchard in Nova Scotia lays down his trees regularly every winter. This he does by cutting the roots on one side, throwing the trees over and placing a few sods on the top branches to keep them in a recumbent position.

There is no doubt the high breeding of our edible fruits has a tendency to weaken the plant on which they are produced. That is to say, the further we depart in the excellence of the fruit from the native wild type, the less is the vine, tree or shrub able to withstand the cold of our climate. Why this should be so I am unable to define, except that highly cultivated plants produce larger sap-vessels, which, when freezing and thawing, expand and contract to a greater degree than those of smaller size which are produced by wild plants, the result of the swelling and shrinking being that the sap-vessels are impaired or destroyed. But it is practice not theory the ordinary fruit grower wants. I say, therefore, that

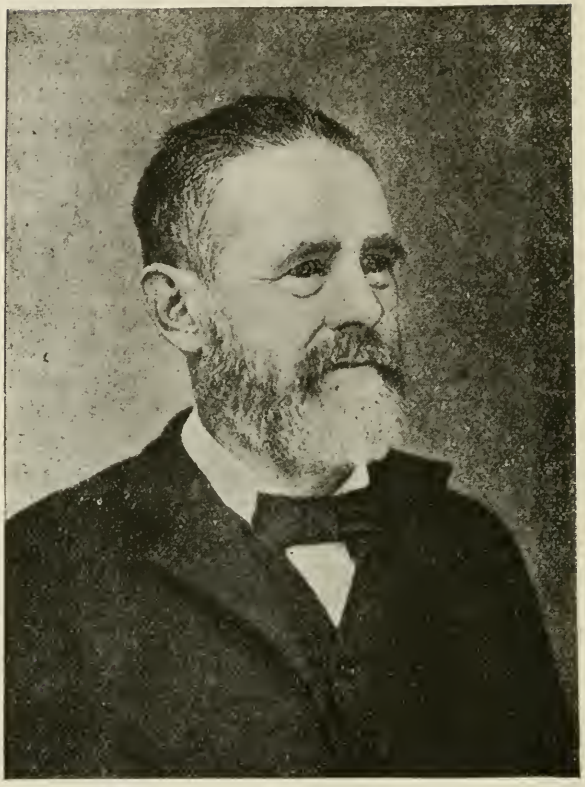
the protection of our raspberries, blackberries and grape-vines alone may cost hundreds of dollars, but it will yield thousands, and the man who says it pays him one hundred dollars a day is quite under the mark. For protection there is nothing better or handier than earth. A four-tined digging fork will hold almost any plant in position whilst soil is being placed upon it. Two men, or man and a boy, can perhaps work to better advantage than one. One will hold the plant down with a fork whilst the other puts on the earth. Many persons use boards, straw, manure, &c., &c., but there is nothing so good as earth for protection. This is exemplified every year by the potatoes which come up in the spring in a field which has produced a crop the previous year. This tuber is very tender, and if left on the ground exposed to the sun will not stand 4° of frost, but if protected with four inches of soil will grow in spring after a hard winter. Although it freezes as hard as a brick, the frost is drawn so gently from it that the sap-vessels assume their normal condition and the tuber springs into life. From three to four inches of soil is quite sufficient to protect any plant or vine. Care should be taken not to dig too close to the roots; the earth should be taken from three to four feet away from the stem of the grape or two feet from berry plants.

Pruning should always be done before the soil is applied, that is the old canes should be removed and the vines neatly trimmed. For raspberries I generally have a wheelbarrow-load of sods, cut 4 x 6 inches square and two inches thick; press the canes down with the fork, placing the sod on the tips. A few shovel-fuls of earth may be added. Grape vines are often put down when there is two inches of frost in the ground, as the hard surface holds the fork whilst the soil is being applied. It is hardly worth stating that the grape should not be buried until the leaves have fallen and the wood is thoroughly brown and ripe. Two men could easily cover two acres of vines in a day, if they have been previously cut loose from the trellises. With regard to raspberries they may be laid down as described, with a sod and manure thrown on them. This keeps them from the sun, and acts as an excellent mulch for next season.

The plants protected may be lifted in the spring, when the frost is out of the ground, and danger of hard weather is over. For vines a cloudy day is preferred, as the sun cracks and dries them if it strikes too hot when they are first exposed. A three-tined hay-fork is the correct thing to raise the plants with in the spring. New plants of grapes, raspberries or blackberries should always be set in fall, and mounded over with earth which should be carefully removed in spring, a stake being set by each plant to show its position.

The Gold Strawberry.—Nearly every contemporary just now has an engraving of this berry. Ii is one of P. M. Augur's seedlings, and is named in honor of the Hon. T. S. Gold of Connecticut. Mr. Augur claims that this plant is hardy, vigorous, and quite productive, and preserves at the same time high quality.

Biographical.



T. H. HOSKINS, M.D.

THOSE who were present at our Summer Meeting at Collingwood will remember a paper on the subject of "Fertilizers for the Orchard," contributed by Dr. Hoskins, of Newport, Vt. As this gentleman is a personal friend and acquaintance of some of our Canadian fruit growers, and well known by others through his frequent communications to the public press, which are especially valuable to Canadians because so often treating of hardy varieties of fruits, we take pleasure in presenting his likeness to the numerous readers of the *Canadian Horticulturist.* We are indebted to *Our Country Home*, Greenfield, Mass., for the cut, and for the following brief sketch of his life:—

Dr. Thomas H. Hoskins — son of Henry B. and Mary G. (Jewett) Hoskins—was born in Gardiner, Kennebec county, Maine, May 14, 1828. His father, of the firm of Richards & Hoskins, paper manufacturers, was, during a long life, one of the chief business men of that city; representing it in the legislature, and repeatedly city treasurer, alderman, and mayor. His maternal grandfather, Jesse Jew-

ett, was one of the leading and most progressive farmers of the Kennebec valley, and among the first to introduce foreign breeds of farm stock into that state. His father was all his life much interested in horticulture; and between the two the bent was given to the boy's mind which has been subsequently illustrated in his life. Educated in the local schools and academy, he in his 16th year entered his father's counting-room. In 1844 he took a situation as book-keeper for a wholesale drug house on India street, Boston. In 1849 he emigrated westward to the city of Louisville, Ky., where he became a partner in the jobbing drug establishment of B. R. Clark & Co. His fondness for "digging in the dirt," as some of his friends phrased it, led to his purchase of a farm near the city, in which he became daily more and more absorbed. His business in town brought him into acquaintance with many of its leading physicians; and his taste for scientific studies, which had characterized him since boyhood, caused, in 1854, his withdrawal from trade, and his entrance upon the study of medicine, in which science he graduated from the medical department of the University of Louisville, at the head of his class, in 1860. Shortly afterwards he returned to New England, and entered upon the practice of medicine in the city of Boston, making a specialty of the diseases of children. He contributed frequently to the press of that city, on sanitary and other scientific subjects, and received appointments as one of the physicians of the Boston Dispensary, and as a city Health Warden. In the spring of 1865 he suffered so severe an injury from a fall on the street that he found himself compelled to abandon his practice. His previous marriage with a Vermont lady determined his choice in seeking a home upon a farm in that state, near the village of Newport, the present country-seat of Orleans county, situated near the head of Lake Memphremagog, where he has since resided. The extreme severity of the winter climate in this elevated locality led him into an ardent study of the "iron-clad" tree fruits, which he has now pursued for over 20 years. His orchard contains some 1,200 fruit trees, embracing every variety capable of enduring the climate, collected from our northern border, Canada, and Russia; and he has solved the problem of tree fruits—apples, pears, cherries, and plums—for all of northern New England and lower Canada. As an ardent gardener and hybridist, he has also produced a considerable number of valuable new varieties of garden vegetables, particularly in the class of early peas, sweet corn, and beans. His grounds have become a sort of horticultural Mecca for those seeking an example of success in these specialties, and he is sought as a contributor by leading agricultural and horticultural publications throughout the country.

The Vineyard.

KEEPING QUALITIES AND USE OF GRAPES DURING WINTER.

BY WM. MEAD PATTISON, CLARENCEVILLE, P.Q.

The cultivation of out-door grapes for domestic use has become so general of late years that the subject of keeping them for winter use. and the best method to attain that object may profitably claim attention. The varieties intended to be laid up for winter use should be those only which adhere well to the stem and are not inclined to shrivel. These should be allowed to remain on the vines as long as they are safe from frost. A clear dry day is necessary for picking, and careful handling and shallow baskets are important.

The room selected for the drying process should be well ventilated, and the fruit laid out in single layers on tables or in baskets where the air circulates freely, the windows being closed at night and in damp weather. In about ten days, the stems will be dried out sufficiently to prevent moulding when laid away. When danger from this is over, and the stems resemble those of raisins, the time for packing has arrived. In this, the point to be observed is to exclude air consistently with their tendency to mould. I have used baskets for permanent packing, but much prefer shallow trays or boxes of a uniform size to be packed on each other, so that each box forms a cover for the lower, the uppermost only needing one. Until very cold weather, the boxes can be piled so as to allow the remaining moisture to escape through a crevice about the width of a knife-blade. Before packing, each bundle should be examined, and all injured, cracked and rotten berries removed with suitable scissors. If two layers are packed in a box, a sheet of paper should intervene, the boxes must be kept in a dry, cool room, or passage, at an even temperature. If the thermometer goes much below freezing point, a blanket or newspapers can be thrown over them, to be removed in mild weather. Looking them over once in the winter and removing defective berries will suffice, the poorest keepers being placed accessible. Under this treatment the best keepers will be in good eatable order as late as February, after which they deteriorate. Before proceeding further I can say, from a basis of long observation, that no fruit is of greater benefit as an article of diet than the grape, and if it were more generally used, dyspepsia, and other disorders of the digestive organs, and consumption would be less known.

The following is a list of the grapes worth noticing that have been tested for keeping :—

Description.		List of Grapes to be Recommended.
Varieties Keeping well Until—	Nov. 1st.	Lady, Antoinette, Carlotta, Belinda.
	Dec. 1st.	Lady Washington, Peter Wiley, Mason's Seedling, Worden, Senasqua, Romell's Superior, Rickett's No. 546, Concord, Delaware.
	Jan. 1st.	Duchess, Essex, Barry, Rockland Favorite, Aminia, Garber's New Seedling, Massasoit, Dempsey's No. 5, Burnett, Undine, Allen's Hybrid, Agawam, Gen. Pope, Francis Scott.
	Jan. 15th.	Salem, Vergennes, El Dorado.
	Feb. 1st.	Wilder, Herbert, Peabody, Rogers No. 30, Gaertner, Mary & Owasso.

The new varieties, Empire State and Norwood, have not been tested here.—*Report Montreal Hort. Society.*

Evaporating Fruit.—Prof. Arnold, in the New York *Tribune*, says evaporating fruit has been a God-send to horticulture and to the human race, by converting thousands upon thousands of bushels of fruit every year into wholesome and delicious food which would otherwise have been lost. Farmers all through western New York find that evaporators suited to their needs pay better than selling the green fruit, and far better than making it into cider to prove a curse to the consumer. An evaporater will cost about $5 for each bushel of apples it will dry per day. The "running expense" in labor and fuel for evaporating apples at Rochester, N. Y., is 10 to 12 cents a bushel; raspberries, 4 to 5 mills per quart; peaches, 25 to 35 cents a bushel. In a large way it costs less than in a small one.

Flowers.

CULTIVATION OF THE AMARYLLIS.

BY HERMANN SIMMERS, TORONTO.

THIS variety of bulbous-rooted plants, is not as common as the merit of the flowers should cause it to be, mainly because the subject has not been given that prominence which it should have considering the rather easy culture with which they may be reared. Therefore with the hope that the result may be different, I will give a few practical suggestions for their successful culture.

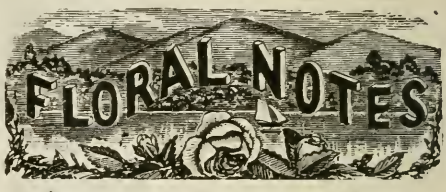
Amaryllis formosissima is a variety which, though not the most beautiful in flower, has nevertheless the advantage of giving the successful amateur a taste for growing the more beautiful, as well as the more expensive varieties. A. formosissima is treated in precisely the same manner as that described under the heading of Hyacinth, with this difference, that a somewhat freer application of liquid manure is required, on account of the bulb being larger, and of the number of flower stems which are thrown up from a single bulb. Its flowers are of a beautiful red, exhibiting a play of golden gleams in the sunshine. They are scentless.

Amaryllis vallotta purpurea is the common dark red Amaryllis usually seen in the amateurs collection, and growing with a vigour from year to year, which, with the careful amateur, may be made to bloom with a larger amount of success than the professional is able to bring them to. Some specimens I have seen have as many as five to eight flower stems, and the bulb, having been grown from year to year, has been fully nine to twelve inches in in circumference. They are easily propagated by the side shoots being broken off, and planted separately in a

pot, together, when in the course of three years' individual handling they attain sufficient size to bloom. The success of this variety has caused many to try the more difficult task of growing the hybrid seedlings. The cultivation is the same as described under the heading of A. formosissima.

Amaryllis Hybrid seedlings cover a larger number of varieties. Suffice it to say, if the amateur has made them a specialty he will attain the climax of perfection. There are European catalogues which list as many as a hundred varieties of this genus, varying in price from one to twelve dollars per bulb, but I have seen splendid results with parties who have purchased bulbs of hybrid seedlings at, say, one dollar to one dollar and fifty cents each. The flowers range in colour from dark red ground striped with white and yellow to pure white ground striped with dark red. The individual flower is from two to three times larger than the A. vall. purpurea, which is in itself an advantage that excites the curiosity of the ambitious amateur. The cultivation of A. hybrid seedlings is perhaps a trifle more difficult, because if planted now they sometimes take from four to five months to root properly, and they should not be brought to the light until the pot is well filled with roots, which is natural; for having to throw out a heavier stem, they must necessarily require more roots to support their handsome flowers, therefore let the amateur not despair, but wait patiently for the sufficient amount of roots required. A frequent application of liquid manure after being brought to the light is necessary. The bulbs when bought should be from five to nine inches in circumference, otherwise they will not be strong enough to flower.

Many other varieties I might class separately, but the foregoing are particularly worthy of special mention and can be easily grown. The cultivation of the other varieties is the same as that of the Hyacinth, with the addition of the special instructions given above.



BY FRANCIS MASON, PETERBOROUGH, ONT.

GOSSIP.

How much we do feel like scolding and complaining! Just as our garden was beginning to look its best, that hoary-headed monster, Jack Frost, one night came near, jumped the fence, and breathed his icy breath all over our beds of flowers; and next morning, when the sun arose, blackness and destruction met us at every turn.

"Fled are the roses, dead are the roses,
The glow and the glory done,
And down the hollow the steel wing'd swallow
Flying the way of the sun.

In place of summer a dread new-comer
His solemn state renews;
His frosts so hoary touch with glory
Maple and oak and thorn;
And rising and falling his winds are calling,
Like a hunter through his horn."

The gorgeous apparel autumn appeared in a short time ago is laid aside, and, as Longfellow has put it,

Within the solemn woods of ash deep-crimsoned,
And silvery beech, and maple yellow-leaved,
There autumn, like a faint old man, sits down
By the wayside a-weary.

And we might say, from all appearances, the weariness has ended in death: for, although the ash, beech, and maple were a short time ago clothed in a coat of many colors, now the frosts and cold winds have removed this last vestige of autumn's reign. And now, though our work in the garden must for a while be laid aside, yet we may plan and arrange for another season's work, taking a back-

ward glance at our successes and failures, which will help us to make success more certain in all departments when again the icy bands are loosed, and mother earth is free once more. But, as we gather around our firesides, let us enjoy the consolation that all of our floral pets were not outside when that midnight assassin, Jack Frost, paid us a visit. These will now become more dear to us, and we will watch them with pleasure as the dreary days of winter pass by. Let us see that comfortable quarters are given them, that their insect enemies do not increase and prey upon them, that food is given and water is not withheld when required by them.

As a mother watches her child that cannot tell its wants, and supplies them, so must we watch our dumb pets; and as a child needs sleep, so must our plants have rest. A cooler atmosphere at night will give this, but sometimes the house is warmer at night than in the day; and, if they are kept up at fever heat day and night, sickness and death must follow. Many times I am asked, "What is the matter with my geraniums: I cannot get them to flower;" or, "I cannot succeed with fuschias; I wish you would tell me what is wrong." Well, as I do not know all the circumstances, I tell them there is something materially astray in the home treatment; it is nothing outside of nature—it can all be accounted for; and he who has plants, and really loves them, will have healthy plants. I want to say something about a few plants that nearly all can succeed with in the house during winter. I would place foremost on this list

PRIMULAS,

better known as Chinese Primroses. They need hardly ever to be out of bloom, except for a short time during the hot summer weather. They must be kept in a cool room or window; they will do little or no good in a hot dry atmosphere.

CYCLAMEN.

Another pretty winter blooming plant, requiring a rest during the summer. By this I mean the bulb may be dried off altogether, or only partially so, and repotted early in September. Most varieties have not only a peculiar flower, but also a pretty marked leaf.

BEGONIA REX

makes a grand plant for the table, if nicely grown, as it does not require any sun. It is very suitable for a north window. Two things are requisite to bring this plant to perfection, viz: large pots with good soil, and plenty of water in the growing season, or during the summer. Not so much is required in the winter.

BEGONIAS FLOWERING,

such as Rubra, Metallica, Nigricans, Schmidtii, and many others, are beautiful for the window garden, but we would not leave out our old standby friends, the *Geraniums*, which can be had single and double, all shades, and may be had in bloom nearly all winter; there is the *Paris Daisy*, in shades of yellow and white, nearly a constant bloomer; then there are the *monthly roses*, *stocks*, *sweet allyssum*, and many others. But I want to tell you

HOW TO MAKE A FERNERY

in an hour, that will give more pleasure and require less care than will any plants that I know of. These home-made ferneries may be made square or octagonal, high or low, rustic or plain, small or large; but so as to be easily understood, let us describe a plain square one. Make or procure a small box, 12½ x 12½ inches, and six or eight inches deep. This is the case to hold the earth and ferns. Now take four lights of glass, 12 x 16 in., and put strips of glazed cambric about

three-quarters of an inch wide, or cotton tape the same width will do, to connect the joints, or edges, of glass, using good glue to cause them to adhere. When dry, place a piece of tape around the bottom and top, using sealing wax at the four corners to make it adhere to the glass, which will bind all together. And now, three or four ferns may be procured from the florist, or from the woods, using leaf mould similar to that which they grow in when found in their natural home. When this is all complete, place the glass framework on top of the box, putting a few tacks around the glass on the outside, to keep it in position. Give a good watering, which will be sufficient for three or four weeks, or more; then place a square of glass on top to retain the moisture. A fernery does not require any sun, but some warmth. Soon the beautiful green fronds will begin to unfold. Any time before the ground in the woods is frozen up, the ferns may be procured. Dig them up carefully, so that an abundance of roots may be retained.

Forestry.

FALLEN LEAVES.

A carpet is laid,—but not by hand,
'Tis woven with skill,—but not by man;
Its colors are crimson and brown and gold,
More curiously wrought than the webs of old.*
And who is its maker, I ask you to say?
You answer, 'tis nature, and truly you may.
But what is nature to work out her laws
Without a controlling, presiding "First Cause?"
That power is in nature, in all of her works,
A secret power that subtlely works,
Infinitely great, though not seen at all,
We know it in everything both great and small.
We call metaphysics and reason to aid,
Which sometimes confound and often mislead
From question to question, each still asking, why?
Till all our conclusions unsatisfied lie.
The Word of God's truth it is can reveal,
Unravel our doubts, hypotheses clear;
And this Book alone affords the true Light
To guide our opinions and judgment aright.

Owen Sound. M. W. MANLEY.

* The cloth of gold belonging to the great Mogul dynasty is valued at 900 rupees, or 450 dollars the square yard, and even beyond price.

SOME OF THE NEWER ORNAMENTAL TREES.

(Concluded.)

THE KATSURA

is another of the new importations, and comes from Northern Japan. It is supposed to belong to the magnolia family, and possesses a botanical name which will by no means increase its popularity, and therefore we prefer to call it by its Japanese name, the Katsura, instead of *Cercidiphyllum Japonicum.*

Our illustration shows one of these trees at the age of five years, and the fact of its having reached eight feet in height in that time is a proof of its extremely rapid growth. The leaf is heart-shaped, as shown in the right-hand corner of the engraving, and in color is dark green above, and silvery green beneath. The leaf stocks and the veins of the leaves are dark red, and contrast prettily with the dark brown of the young bark, and make the tree quite attractive.

At Boston, this tree is reported to be perfectly hardy, and therefore it would no doubt succeed in southern Ontario, but more than this we cannot say at present.

THE KATSURA.

The *Rural New-Yorker* says this new tree has been tried on the Rural Grounds, and objects to it on the ground that it loses its leaves quite early in the autumn.

THE PIN OAK.

No lawn or park of any size is complete without one or more specimens of the oak—the king of forest trees. Nor need there be any lack of variety in kind, when we find as many as forty varieties offered for sale for ornamental planting in the catalogue of a single nursery.

The Pin Oak, or *Quercus palustris*, is one of peculiar beauty for lawn or park planting. The foliage is a deep green, and finely divided. Its habit of growth is very striking, for as the tree advances in age, the branches

THE PIN OAK.

assume a drooping habit, and the lower ones sweep the ground.

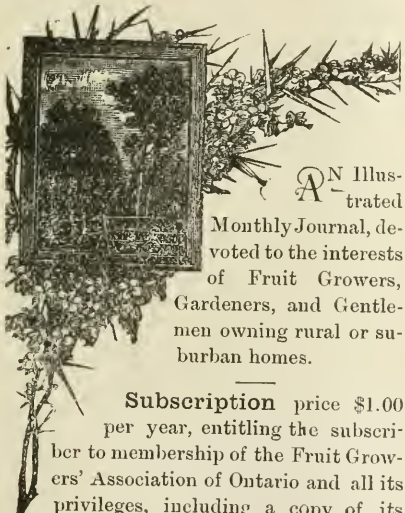
Our illustration shows one of these trees at the age of ten years, with a height of twenty feet, and a girth of twenty inches.

VARIEGATED SHRUBS.

Many shrubs, with variegated and colored leaves, are very beautiful in their early spring foliage, but when the summer heat comes on, the variegation is lost, and the shrubs present only green leaves, and in colored leaved kinds, of a dull, muddy green, less pleasing than in the normal form of the plant. There are two shrubs, however, that have proved thoroughly satisfactory in all seasons. One of these is the "Purple-leaved Barberry," a form of the common Barberry (*Berberis vulgaris*), the leaves of which are of a rich maroon-purple color, and remain so. The flowers of this variety are very pretty, being of a darker yellow than

in the ordinary kind, with the calyx purple, and the petals tipped here and there with the same color. Another of our favorites is the Variegated Rose of Sharon (*Hybiscus Syriatus*). There are several forms of this with variegated leaves, but the one referred to originated with, or at least was sent out by, the late Robert Buist. The leaves are broadly and distinctly margined with creamy white, which remains in perfection until the end of the season. This attempts to flower, but makes a complete failure of it. The flowers are excessively double, open about half way, and dry up. It would improve the appearance of the shrub to remove the flower buds as soon as they appear. This shrub is readily propagated by cuttings, and is altogether the most satisfactory of any with variegated foliage, that we have tried. The variegated Box-Elder, or Ash-leaved Maple (*Negundo aceroides*), sometimes so beautiful, is an utter failure with us. Variegated shrubs, generally, succeed better in a rather poor soil than in a rich one.—*Am. Ag.*

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.

The writer, in accepting the appointment of Secretary-Treasurer of the F. G. A. of Ont., and Editor of the *Canadian Horticulturist* for another year, desires to express his appreciation of the many kind words concerning his work, spoken during the past year; and of the hearty co-operation on the part of the officers and members, which has so materially aided him in his responsible position.

And now that the time is approaching for the enlargement of our journal, he would respectfully solicit the hearty assistance of all friends of horticulture, not merely in enlarging our sphere of usefulness by sending the names of new members, but in contributing items of personal experience which may serve to advance the interests of our favorite science.

Our proper sphere of work as an association is not the advancement of personal interests, nor financial gains, except so far as these results may grow out of the study of horticulture as a science and as an art. We aim at the improvement of our country as a whole, the adornment of its parks and pleasure grounds, and the wise direction of the efforts of the cultivator of the garden and orchard, in such a manner as shall most increase the happiness and the comfort of our people.

Enlargement of the Canadian Horticulturist.—Our readers will be pleased to learn

that plans are in progress for the enlargement and inprovement of this Journal. It is found that the present size is too small for the amount of valuable matter which comes to hand each month, and in consequence a great deal has to be held over from month to month. Besides this, it is the desire of the Directors, and of the Editor, that the *Horticulturist* should grow in value every year, until no fruit grower, gardener, farmer, or gentleman owning a suburban or country home can afford to be without it. We aim not at profit, but to confer benefit upon our readers, and every dollar of our income above the necessary expenses, will be spent in their interests. We ask our friends to speak a word in our favor on every opportunity, and aid us in doubling the membership of our Association for the coming year.

Owing to some irregularity in the mailing department, at Toronto, we find a good many complaints of not receiving the copies of this Journal. We shall be glad to receive a list of missing numbers, from any one who has this complaint to make, and will at once forward them from this office.

We have also a good many Reports of past years, which are of great value. One of these we shall have pleasure in sending out to each of those who failed to receive the Report of 1886, on receipt of a post card saying what Reports they have already. Others may have these Reports for 25c each.

Members who have received no share in the plant distribution, of last year, may select the package of fall bulbs; or may make two selections from our list for next spring, when sending in their member's fee for the new year.

Where shall we meet next?—We are not by this begging an invitation. Plenty of places appreciate the great impulses given to the study of horticulture, and to better cultivation of orchards and gardens, by the presence of so many enthusiastic horticulturists, and fruit-growers, and by hearing them discuss the subjects of flowers, fruits and forestry. But wherever the Winter Meeting, which is fixed for the second Wednesday in February, is most wanted, there the executive committee will arrange to hold the meeting. Some of our members in the eastern part of the Province complain that we seldom hold meetings within their reach. Well, then, now is the time to speak for the meeting to be held in one of the cities in that direction.

Careful Transportation of Fruit.—A resolution was passed at the Annual Meeting that the President, Vice-President, Secretary, and Mr. P. C. Dempsey be a Committee from the Fruit Growers Association of Ontario, to correspond with the steamship companies, with reference to the careful transportation of our fruits to England.

This is an important point, and upon it largely hangs the development of our future export trade. In his annual address Mr. M. Allan said—"If our steamship companies would provide cold blast for the compartment where fruit is stored, so that damage by heating would be avoided, we could successfully ship such apples as the Duchess of Oldenburg and realize high prices; and if the market demand would permit, even such pears as Clapp's Favourite, Bartlett, Flemish Beauty and Boussock could be shipped. Our shippers would find it greatly to their advantage to provide good storage, so that varieties could be sent forward in proper season when the market demand is best for each particular variety.

Mr. G. W. Cline, of Winona, sends us a collection of varieties of plums, of which he makes a specialty. Among them we notice Gen. Hand, Golden

Gage, Reine claude de Bavay, Coe's Golden Drop, German Prune, Pond's Seedling, Columbia, Duane's Purple, and Lombard. Mr. Cline has satisfactorily demonstrated the advantage of using Paris green in fighting the curculio. By applying it each year about the time of the fall of the petals, he has succeeded in raising abundant crops during the past two or three years in a section where plum growing had long ago been totally abandoned, on account of this pest.

Winter Protection of Blackberries.—W. A. B. writes to the *Rural New Yorker*, from the east shore of Lake Michigan, strongly advocating winter protection of the blackberry, and thus growing the better kinds, as he considers the Taylor, Snyder, and Stone's Hardy inferior to the wild varieties growing there. His method of covering "requires two men, one of whom removes a spadeful of earth from one side of the base of the canes, while the other grasps, with a pair of leather mit'ens, the top of the canes and brings the tops to the earth, laying the canes as near the ground as practicable without breaking, when a few spades of earth are thrown upon the tops to keep them in a horizontal position." A covering of hay or straw completes the work. This plan is quite practicable with the Wilson, but is a little more troublesome with such stout growing kinds as the Lawton or Kittatinny.

Ferrous Sulphate.—Dr. A. B. Griffiths, F.R.S., finds that ferrous sulphate will destroy parasitic fungi; and the same article, according to the *Scientific American*, is under test as a special manure for the vineyard.

Industry Gooseberry.—Mr. M. H. Beckwith, of Geneva, N.Y., says this berry mildewed with him, last year worse than any other variety. The fruit was affected so badly that it nearly all dropped off before being fully ripe. What is the experience of our readers?

The Northern Light was shown at the American Pomological Society's Meeting at Boston. The *Rural* says of it: "A very showy white grape, with immense clusters." It was also shown at Grimsby, and was the object of much attention, owing to the great length of the clusters.

New Strawberries.—A writer in the *Rural New Yorker* has fruited Itasca, Logan and Bubach this year with great satisfaction. He finds the *Itasca* larger and more productive than the Crescent, about as firm as the Wilson, and of the best flavor. The *Logan*, he thinks, may prove the most productive large berry yet offered, surpassing even the Bulbach in uniformity and in size and in flavor.

Prunus Pissardi. — The *Gardener's Monthly* thinks it would be much better to call this plant the blood-leaved cherry plum, instead of the Latin name, which would give the impression that it is a distinct species when it is only a purple-leaved variety of the Myrobalan plum. It was named after Mr. Pissard, gardener to the Shah of Persia, who discovered it.

American Apricot Peach.—The *Gardener's Monthly*, for October, describes a new peach upon which it has bestowed the above name.

Like the Delaware grape, the Lady apple, and the Seckel pear, this peach is supposed to be desirable as a desert fruit, notwithstanding its small size, on account of its delicious flavor.

It is medium in size, of a golden apricot color, with rich red shading on the sunny side. It is a free stone, and the flesh is sweet and melting. It originates in South Carolina, and the time of ripening is with that of the Pine Apple peach.

In one day last summer, one hundred and ninety-five car loads of strawber-

ries were shipped over the Delaware Railroad.

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.

71. Bliss' Triumph Potato. — *Do you know anything of Bliss' Triumph potato? Is it earlier or later than the Early Rose?* L. F. S.

REPLY BY J. A. BRUCE.

Bliss' Triumph may be thus described: tubers of medium size, round and uniform in shape, with but very few small ones; eyes slightly depressed; color a beautiful light red; flesh fine grain and of excellent flavor. Messrs. Bliss & Sons described and recommended it as earlier than the Early Rose, but the public preferred the Early Rose. We observe by United States catalogues that it is better adapted for a southern latitude than most other varieties.

72. Bursting Bark.—*For bursting of the bark on apple trees, some growers recommend slitting the bark from top to bottom of trunk with a sharp knife. Is this advisable? If so, on which side of the tree should it be done? And at what season?* G. J. R., Penetang.

The bursting of the bark of apple trees is caused by excessive cold in winter. The freezing of the sap causes a sudden expansion of the cells which contain it, rupturing their walls, and destroying the bark. Some varieties called "iron-clads" withstand a greater amount of cold than others. Slitting the bark would neither prevent nor cure this evil.

73. Budding and Grafting.— *What is the best practical work on budding and grafting?* G. J. R.

Either "Thomas' Fruit Culturist" or "Barry's Fruit Garden" would probably give you all the information you require, and very much beside.

74. Clay Loam.—*What chemical constituents does clay loam possess which are lacking in sandy loam?* G. J. R.

ANSWER BY J. A. MORTON, WINGHAM.

Loams are soils, mixtures of clay, sand, carbonate of lime and animal or vegetable matter in decay, which derive their distinctive names from the preponderating ingredient — clay loam, when the greater proportion is clay, calcareous loam, when lime is the chief ingredient and sandy loam, if a greater admixture of sand than either of the others. Speaking generally, all loams contain the same elements; ths difference being one of proportion in the elementary constituents. The chemical constituents in fertile soils are: Oxygen, carbon, hydrogen, nitrogen, phosphorus, sulphur, silica, alumina, soda, potash, irod, magnesia, calcium (lime). chlorine, and perhaps iodine, bromine, lithia, and fluorine, with maybe other elements, according to the composition of the rocks of which the soil is disintegrate.

75. Rogers' Grapes, 9, 15, and 22.—*Does the Lindley, the Agawam, and the Salem grape ripen with the Concord, or is each earlier or later, respectively? Which of the three is the better grape? Will they ripen in this district before the frost comes?* L. F. SELLECK, Morrisburg, Ont.

The Salem and the Agawam ripen very soon after the Concord, and the Lindley a little before it. In quality, the Salem is preferred by many. It is large, showy, rich, and excellent; but it is very subject to mildew, for which reason it is now seldom planted, except by the amateur. The Agawam is also

a very fine large grape, with tender juicy flesh, but is subject to rot in unfavorable seasons. On the whole, the Lindley is the best grape of the three for general planting in Canada, as it is more certain to mature, and the vine is very vigorous and productive.

76. Grafting Grapes.—*Is moist sand in the cellar the best receptacle for the cuttings for spring grafting?* L. F. S.

Yes, it is the best, generally speaking; although the writer usually berries the cuttings in the earth outside, in the dry sandy loam. They will not be needed for grafting until May or June.

77. Spirea Japonica.—*Will the roots be best set in the ground this fall, or put in moist sand in the cellar?* L. F. S.

Probably in your district they would be safer kept in the cellar until spring.

78. Asparagus Culture.—(1) *When is the best time to transplant asparagus roots, seeds sown last spring?*

J. R., Berlin.

REPLIES BY J. A. BRUCE.

As the plants are only five months old, would advise spring planting. It should not be done whilst the ground is too cold, or, in other words, not before the plants begin to push. If possible, advantage should be taken of mild, cloudy weather. When the air is moist they should be carefully taken up with a fork, and the roots preserved as entire as possible. They should not by any means be allowed to get dry; as soon as the roots are in proper position, they should instantly be covered with the soil.

(2) *What kind of soil is best?*

A rich sandy alluvial soil is naturally best adapted for the growth of asparagus, and in such soil its cultivation is an easy matter. In preparing the ground for a plantation attention should be directed to the texture of the soil; and if this is too close, as is generally the case, such means should be adopted as will effectually reduce it to a sufficiently light and porous style. The application of large quantities of manure has this tendency.

(3) *How would black muck do?*

Black muck, when largely mixed with silver or other sands, and the subsoil made porous and thoroughly drained, will grow fine succulent stalks, always keeping in view that large quantities of manure are essential in the formation of an asparagus bed. The autumn is the proper season to prepare the ground for spring planting, as it allows time for the beds to get settled, and the winter frosts mellow the soil, which tends to vigorous growth, the great desideratum in asparagus culture.

79. Japan Ivy.—*In the October number of the Horticulturist is a picture of, and an article on, Japan Ivy. Could you kindly inform where it can be procured—and price.*

C. Greenaway, Strathroy.

Note.—Write to Mr. James Vick, Florist, Rochester, N. Y.

Fruit Reports.

APPLES.

Reports from all sides are encouraging. Chicago and Montreal men are competing at $1.75 to $1.85, f.o.b., west of Hamilton. The Montreal market ranges from $2.25 to $3.00 for prime winter fruits, with an upward tendency. The returns from shipments to England are encouraging, prices running from $3.00 to $4.00 for such kinds as Greenings, Baldwins, etc., and from $4.00 to $5.00 for such fancy kinds as King of Tompkin's Co. The supply of apples in the United States is very light, and prices are steadily advancing in Philadelphia. Advices from there on the 13th October quote choice fall apples at $2.75 to $3.00.

A REPLY TO INQUIRERS.

In reply to a large number of enquiries, which I cannot find time to answer personally by letter, I can confidently recommend the following firms to our Canadian shippers. In London, Eng.—Mr. J. B. Thomas, Covent Garden Market; Messrs. Williams, Thomas & Co., Liverpool; Messrs. L. & H. Williams & Co., Glasgow. These firms have very large storage capacity. Their method of handling is this: When a cargo arrives it is transported to the storehouse and every barrel opened and examined. Those that are decaying are sold at once. Those loosened slightly by the voyage and not shewing signs of decay, are tightened thoroughly. Then in selling they offer in the auction mart, but do not sell unless a bid is made up to what they consider the fruit fairly worth. They sell largely in lots in the warehouses. A grower can ship direct to these firms, and get returns promptly. They will pay drafts for a proportion at time of shipping, say from $1 to $1.75 per barrel, according to brand. The freight rates vary from 80c. to $1.15 per barrel through the season. At present the rate is 90c. average. Fruit shipped this season has carried best via New York, owing to the fact that the American roads handle with less shunting, and steamships will give special apartments and cold blast.

ALEX. McD. ALLAN,
President F. G. A.

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 ILLUSTRATED LONDON NEWS. American edition. Published at No. 237 Potter Building, New York.

The number for Oct. 15 contains an article of two and a half pages about the "Green Lanes" of England. The writer claims that the beauty of the country cannot be seen or appreciated in a hasty ride through it in a phaeton, a four-horse drag, or, much less, "on that abominable piece of mechanism, a bicycle. Patient and persistent wayfaring through its green lanes—by no other means can you get at the secret of its beauty, and understand why it is, and how it is, that Englishmen, who thoroughly know their country, love it with so deep and passionate an affection." A series of pictures illustrating the scenery in the Atlas Mountains in connection with an account of the British Mission to Morocco is also highly interesting.

REPORT OF THE BOTANIST to the New York Experiment Station, Geneva, N.Y. By J. C. Arthur.

The Report treats of Pear Blight, Rotting of Tomatoes, Strawberry Mildew, Plum-Leaf Fungus, Smut in Oats, etc.

CATALOGUES.

SIMMERS' ILLUSTRATED AND DESCRIPTIVE CATALOGUE OF FLOWERING BULBS. J. A. Simmers, 147 King St. E., Toronto, Ont.

LOVETT'S ILLUSTRATED CATALOGUE OF TREES AND PLANTS. Autumn, 1887. Choice small fruits a specialty. J. T. Lovett, Little Silver, N.J.

THE GREENWOOD NURSERIES, Como, Que. Hardy apple trees for sale, suitable for the Province of Quebec. R. W. Shepherd, jun., Montreal, Que., proprietor.

CATALOGUE D'OGNONS A FLEURS, graines et plantes d'antomne, divers objets et ustensiles horticoles de H. Schmitz, 20 Rue de Brabant, Gand., Belgique.

BEES AND HONEY. Illustrated Catalogue and Price List. A. I. Root, Medina, Ohio.

"AH! WHAT'S THIS?" exclaims the intelligent compositor. 'Sermons in stones, books in the running brooks?' That can't be right. I have it! He means 'Sermons in books, stones in the running brooks.' That's sense." And that is how the writer found it. And yet he was not happy.—*Boston Transcript.*

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WEEPING DOGWOOD.

(Cornus Florida, Pendula.)

The Canadian Horticulturist.

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THE NEW WEEPING DOGWOOD.

TOO MANY weeping trees would be out of place in a pleasure ground. They give a stiff and sombre appearance to a place, and are suggestive of grief rather than of good cheer. Yet an occasional weeping tree in a group of other trees, or standing alone in the rear of a yard, is a graceful object. One old Weeping Willow (*Salix Babylonica*), standing for a hundred years or so on the roadside near Grimsby, is most conspicuous for the beauty of its long, slender drooping branches, and we never pass it without looking upon it with admiration. But this is a tree of colossal proportions, and one that would be out of place in a lawn of limited extent. For such a place there are several suitable weepers, as for instance the Cut-leaf Weeping Birch, the Kilmarnock Weeping Willow, the Weeping Mountain Ash, and the new Weeping Dogwood.

The latter, known technically as Cornus Florida Pendula, shown in our colored picture for this month, belongs to the Dogwood Family or Cornaceae, a name derived from the Latin word *cornu*, a horn, alluding to the hardness of the wood. The bark is bitter, and by some considered medicinal. It is a variety of the White Cornus (*C. Florida*), which is common in rocky woods southward—a tree which only attains a height of twenty or thirty feet, and which is also a very attractive ornamental tree, with showy white flowers in spring and clusters of red berries in autumn. The Weeping Cornus is similar in flower and fruit, as is well shown in the upper part of the painting. The so called flowers are in reality close heads of flowers surrounded by a four-leaved corolla-like involucre, the whole somewhat resembling a clematis flower.

The tree is unique among weepers in one respect, that is in having a perfectly upright leader, from which the opposite pendulous branches curve downward most gracefully of their own accord; this characteristic is shown in the illustration, which was drawn from a three-year old tree, grafted near the ground, and allowed to follow its own habit, without any aid whatever from string or pruning knife.

THE RED-OSIER DOGWOOD (*C. Stolonifera*) is quite common in the Niagara district growing wild in damp places, and forming dense clumps. It is only a shrub, growing from three to six feet high, and very ornamental even when stripped of its foliage, on account of its smooth, bright red-purple branches, the annual shoots of which are like the osier or basket willow in habit of growth. Its berries are white and fewer in number than those of the tree above described. It is easily propagated by layers, and we see no reason why this shrub should not have a place among our ornamentals, especially where hardiness is a virtue.

THE JEWEL.

On page 127 Mr. Wm. Mead Pattison wrote of the persistent and successful labors of Mr. John Burr, of Leavenworth, Kansas, U.S., in producing varieties of grapes of superior quality and earliness, capable of resisting the severe climatic changes of northern sections. Three of his new varieties of black grapes are there commended as giving great promise, viz., the Standard, the Ideal, and the Jewel. Of the latter, by favor of Messrs. Stayman & Black, of Leavenworth, we are able this month to give our readers an engraving said to be made from a photograph of a medium sized bunch and berry.

It is claimed for this grape that it is an extra early black grape of superior excellence; that it colors quite as early if not earlier than the Champion, and that it is ripe soon after commencing to color; that in quality it is nearly equal to the Delaware, and in appearance very attractive, being jet black with a handsome delicate bloom. It is also claimed to be quite hardy.

From all that we can learn of this grape we believe we are justified in recommending it for trial in Canada.

FRUIT IN NORTH SIMCOE.

By G. C. CASTON, CRAIGHURST, *Director for Agricultural Division No. 13.*

NOW that the fruit season is over, I herewith send you a short report on the fruits in this locality during the season of 1887. Strawberries showed a profusion of bloom and encountered no frosts, but we had a very dry spell of weather in May that retarded the growth. Still there was a fair average crop; I think in most places rather more than an average. But the hot, sultry weather of July caused the latest berries to ripen prematurely, and ren-

THE JEWEL.

dered the last two or three pickings rather hard to save. The

OLD RELIABLE WILSON

is still the best all round berry here, although we have several other varieties, viz., Crescent, Sharpless, Manchester, Triomphe de Gand, etc. I have also the Jessie, Jewel, Daniel Boone, and Belmont; but have not had them long enough to report as to their good or bad qualities.

RASPBERRIES

were very fine the first of the season, but were much injured toward the last, by the continued hot, dry, weather of July and August. I grow the Cuthbert red, and Gregg Black cap. The Cuthbert is a fine berry, but just a little too tender for our winters. We want something a little hardier, as it should be well sheltered and grown in a place where the snow lies deep in winter.

APPLES

were not as good a crop as usual. Though showing an abundance of blossoms, they yet failed to set much fruit. This was more especially true of the winter varieties (for the Astrachan was better than it had been for several years). The Duchess, though the fruit was very fine, did not bear as well as usual. Golden Russets, and in fact all winter apples, are likely to be scarce. There is one thing remarkable about this season, and that is that, although the crop was small and the weather unusually dry, the apples were the finest I have seen for several years, and not a sign of the fungus or scab on any of them, which proves that the extent of this fungus growth is some way connected with the season, as in the case of the rust in wheat, but in what way I leave to scientific men to explain. The Codlin Moth is getting worse with us every year, causing a premature ripening and dropping of the fruit. I think we shall have to give them Paris green if we are going to stop their ravages. The varieties of apples most suitable to our climate are, for summer: Duchess, Astrachan and Yellow Transparent; and for winter: Wealthy, Mann, Golden Russet, Red Pound or Simcoe, Pewaukee, and Spitzenburg. It is only the hardy kinds that will succeed here. But those that do succeed bear very very fine specimens of fruit, and I believe that the farther north you can succeed in growing them the finer the fruit, and this applies to other fruits as well as apples. I have been very much interested in the reports of Mr. A. A. Wright, of Renfrew. He seems to have a pretty cold climate to contend with, colder even than ours, and his experience is valuable to us, for any variety that Mr. Wright succeeds with will be sure to succeed with us in Simcoe. This was the best season for

GRAPES

I have yet experienced. I never saw finer Concords than I had this year of course my vines are young, well manured, and pruned; all the varieties I have ripened perfectly. I have Moore's Early, Rodger's No. 3 and 19, Worden, Early Victor, Vergennes, Prentiss, Champion, and Brighton. I have also the famous Niagara, but fail to see wherein it excels the Prentiss in

quality. Among the red grapes I prefer the Brighton. It is far the best with me. And among the black varieties, take it all round, the old Concord beats them all. The Concord seems at home here. It has ripened now two seasons in succession perfectly, and hope it will continue to do so, for it is unsurpassed. Mildew is a thing unknown here so far.

LESSONS OF THE DROUTH AND ITS EFFECT ON GRAPE VINES.

THE DELAWARE, CLINTON, BRANT AND CONCORD.

BY A. HOOD, BARRIE.

LITTLE as we may desire at any time to be visited by such a prolonged drouth as the one we have just passed through, and dearly bought as we consider any lessons it inculcates, still there is something to be learned even from misfortunes; something which it is frequently possible to turn to good account.

The first thing that strikes me on looking back is a feeling of surprise that vegetation has not suffered more than it has; with the thermometer day after day, and week after week in the neighbourhood of the nineties, and with soil as dry as dust, it is surprising to me that some of my plants continue to live; and that they have lived and in some cases flourished, would seem to indicate that they must draw their supplies from other sources than rainfall. When considering this subject I have sometimes supposed that as the simple elements of which water is composed are found in abundance in the soil, and in the atmosphere, that roots of plants might possess the power of so uniting those elements as to furnish themselves with the needed supply; be that as it may, if they have no such power, then the moisture they require must be drawn largely from the subsoil by capillary attraction; not in sufficient quantities, however, under a scorching sun — especially if accompanied by wind—to answer the requirements of vegetation.

I noticed during the very hottest weather, and when we were longing for those showers which we knew fell to the south, while we only got a few drops that would scarcely wet a leaf, that plum trees and grape vines were suffering severely; the latter losing a great many leaves and threatening to dry up the whole of the fruits; a week or two later, although no rain had fallen, both appeared to revive quite perceptibly; the cause being I presume that as the weather had become much cooler, and the evaporation from leaves so much less, that the moisture brought from the sub-soil by capillary attraction was sufficient for ordinary requirements.

As therefore we had more of the drouth than our neighbours to the south, we have had better opportunities of observing its effects, and as regards grapes I find that the Delaware has suffered less than any other kind on my grounds; having ripened perfectly the whole of its fruit; which is more than can be said of any of the others; Clinton and Concord lost so many leaves that part of the fruit shrivelled up and was worthless; part of it filled out but never perfectly ripened, and was worthless also, and scarcely half was fit for sale or use. Roger's No. 9, 15, and Salem, were nearly as bad, and might have been worse if the crop had been as heavy.

With the exception of the time when the grape vine leaf hopper attacked my Delaware I have always raised as

many pounds on a vine of that variety as of Concord; I obtain from one to two cents per pound more for them; they ripen earlier; the vine is quite as hardy, and, which is far from being the case with Concord, every bunch is fit to sell; if therefore it paid to raise grapes in this locality for market, which at this season's prices it certainly does not, I would grow nothing but Delaware.

I have a few vines of the Brant—Arnold's No. 8—a variety that originated with the late Chas. Arnold, and which deserves, I think, more attention, especially in the north, than it has received; it has stood next to the Delaware with us this year in withstanding the effects of the drouth, having ripened nearly all its fruit. It is a rampant grower, and runs so much to wood when young that it bears but little fruit; quite as much, however, as the Clinton, but both improve in this respect by age. The vine is exceptionally hardy, its vitality being so great that I have never known a vine to die or fail to grow, when first planted; the berries run a little larger than Clinton, are not quite so acid, have smaller seeds, and ripen a week or ten days earlier, coming in about with Moore's Early, and a week earlier than Concord. The bunches are long—double or treble the size of Clinton—and the berries packed so close on them that, in a wet season, they are apt to squeeze each other to bursting; this is a fault, a well filled bunch is a good thing, but a bunch filled to bursting is not desirable, but it is certainly the case with Brant; the flavour is vinous, less acid than Clinton, and should I think be equal, if not superior, to that old standard as a wine grape; it cannot be called a table grape, neither is the Clinton; but the late Editor of the *Horticulturist* has frequently said that he prefers a perfectly ripe bunch of the latter, to any other grape for his own eating, and in some seasons I think he is right, but I believe Brant is better; I certainly prefer it as grown this year to any other grape on my grounds, not excepting even the Delaware, but it must be thoroughly ripe, and so must the Clinton, and so must the Concord, before their good qualities can be palatably experienced, or their value as table grapes properly appreciated.

I can imagine a person growing any or all of these three varieties for years—in fact I have done it myself—without being aware of the perfection they will attain when really ripe; they are generally plucked, for fear they may be stolen, as soon as coloured; when they are certainly far from being ripe. Is it too much to say that half the fruit grown by private individuals is plucked in an imperfect state from a fear of this kind?

NOTES FROM EXCHANGES.

EXPORTATION OF APPLES.

C. P. Dewey, in the *American Agriculturist*, says that the plan of sending American apples to Europe, was first devised by a Scotchman, named Buchanan, who, in 1845, sent five barrels from Boston to Glasgow. The venture being successful, he repeated it year after year, until he had established a regular trade. The business has now become general, and instead of five barrels, seven or eight hundred thousand are shipped annually.

During ten years, from 1876 to 1886, Canada alone has shipped to England 721,813 barrels of apples, and the prospect is that the business will reach gigantic proportions in time to come.

PROMISING NATIVE CHERRIES.

In the same journal, Prof. C. H. Bessey, of Nebraska, writes a description of two native cherries, he has discovered in Northern and Northwestern Nebraska, and which are worthy of cultivation, with a view of furnishing new and useful varieties for the West. One was the *Sand Cherry* (Prunus Pumila), a very small shrub, with slender trailing stems, which creep over the soil and strike roots here and there. The cherries ripen in July, and closely resemble the common garden cherry in size and shape. The color is a deep black-red, which changes to black when fully ripe. The bushes bear profusely.

The other was the *Rocky Mountain Cherry* (Prunus Demissa), is a shrub from three to eight or more feet in height. The cherries are borne in long racemes, like those of the wild black cherry, but are a little larger. When ripe they are black, and very agreeable in taste, and are much used for pies.

SHARPLESS AND CUMBERLAND AHEAD.

Mr. D. M. Dunning, of Albany, a careful cultivator, says in the *Country Gentleman*, that he has tried Jewell, Parry, Ontario, May King, Bubach, Manchester, Bidwell and many other strawberries, and does not find any of them equal to Sharpless and Cumberland. The Cumberland is a strong grower, free bearer, and extra good in quality, though lacking in color and a little soft for shipping to distant markets. With proper cultivation, he prefers the Sharpless for all purposes.

Next to these two varieties he would choose the Wilson. He believes that if it were sent out now-a-days as a new variety, it would "take the strawberry world by storm, and create a tremendous excitement."

THE JESSICA GRAPE.

The Jessica out-does in flavor any garden grape known, and it is a wonder that no more is said of it. The little white grape, with its small clusters, is not over attractive, but once between your lips, you will avow it has all the good qualities a grape can have in one. Sweet, with a honeyed touch, at first taste, succeeded by a freshness of mild acid, and a bouquet that lingers on the sense, it is a grape for connoisseurs to linger over and praise.—*S. Power, in Vick's Magazine for October.*

HARDY FRUITS—VARIETIES RECOMMENDED FOR THE COLD NORTH.

Apples for Quebec.—In the report of the Fruit Growers' Association, for the Province of Quebec, Mr. R. W. Shepherd, jun., recommends the following varieties for profit, in the order named: (1) Wealthy, (2) Fameuse, (3) Duchess, (4) Canada Baldwin, (5) Winter St. Lawrence. He says further:

I hope to increase the list of my commercial apples by adding *Yellow Transparent* (Russian) and *Brockville Beauty.* These two apples have not yet been put on this market. Being hardy and productive, and ripening, respectively, just before and after Duchess, they fill a gap in my list of marketable varieties. The Brockville Beauty is one of the most attractive looking apples, and its quality is *very good;* marketed in baskets, it ought to command high prices. I have not cultivated the Montreal Peach or Montreal Strawberry to any extent, because, Montreal being my principal market,

these varieties seem to be too plentiful and too cheap.

Mr. John M. Fisk recommended the following as the five best varieties for table use: *Summer*—1. Yellow Transparent, or Charlottenhaler, equal; 2. Duchess of Oldenburg. *Fall*—3. St. Lawrence. *Early Winter*—4. Fameuse. *Late Winter*—5. Golden Russet.

Mr. C. Gibb of Abbotsford, Quebec, says that the five best varieties of apples for profit in that province are in his opinion, (1) Duchess, (2) Alexander, (3) Wealthy, (4) Yellow Transparent, (5) Haas.

Plums for Quebec.—Mr. Shepherd says, "Last year Mr. Wm. Evans asked me to visit his nursery, I think in the month of September, and I was very much struck with the *Moore's Arctic* Plum. The trees were bearing, and he allowed them to grow and bear in the nursery rows, and certainly the crop was the most extraordinary I ever saw. The trees were bent to the ground with the weight of fruit. It is a very dark blue plum, very fair size, as large as the Lombard."

Mr. Gibb says: "My special hopes now are turned toward the improved varieties of the North-Western States. I fruited *De Soto* and found it an advance on any I have tried. Another I think a good deal of is the *Wolf*, a large plum of but fairly good quality, and one of those hardy and vigorous trees with rough, coarse leaves, that look as if they could stand any amount of summer heat. I have more hopes of North-West plums from my own experience, and from what I have seen in the West, than I have of even the Russian plums.

NEW FRUITS.

During the discussions on this subject at the meeting of the Am. Pom. Society at Boston, the *De Soto* plum was spoken of by many as a special favorite, Mr. Brackett of Iowa placing it at the head of the list for Iowa. The *Stevenson's Rareripe* peach was stated by Mr. Caywood to be the leading sort on the Hudson; being "larger than the *E. Crawford*, better in quality, twice as good a grower, and quite as healthy." The *Moore's Early* grape was considered valuable only because of its earliness; otherwise inferior to the Concord. The *Empire State* was put down as less productive than the Niagara, the clusters small, and in some places subject to mildew—but in quality it was acknowledged to be better in quality than any white grape yet introduced.

THE BALDWIN APPLE FAILING.

Until the last few years the Baldwin has held the first place among market apples. The increased severity of the winters, resulting from the destruction of timber, has caused the Baldwin to suffer above most other popular varieties. During the winter of 1884-5 50 old trees were killed in the college orchard at Lansing (latitude 40 degrees) of which over 40 were Baldwins, the remainder being mostly Rhode Island Greenings. In fact, there is not a vigorous treee of these varieties left in the orchard. All others among the market sorts were not injured. It is more and more evident that the Golden Russet is one of the best market apples for this region. The tree is remarkably hardy and vigorous, and a good bearer. The apples are uniform in size and color, very firm, fair, and good keepers. In market they bring 20 per cent less than Baldwins, but this difference is overbalanced by their productiveness and hardiness. Russets should be barreled in the fall to prevent withering. The Spy is a tardy and unreliable bearer; the apples are often imperfect, and they are too tender for distant markets. I

should not recommend it here for the flatter lands. Fameuse is one of the best when the fruit fair, but it is unreliable. Canada Red, top-grafted, is one of the very best, and in this vicinity undoubtedly ranks next to the Russet, or perhaps superior to it. The St Lawrence, Oldenburg, and Twenty Ounce appear to be among the best fall apples for this vicinity. The Oldenburg demands a close market, however, as it decays soon. The Russian a ples of recent introduction are not yet sufficiently known to be recommended for profit.—*Prof. L. H. Bailey, Michigan Agricultural College.*

SCOTT'S WINTER APPLE.

Scott's winter is an apple which is coming strongly to the front as an iron-clad long-keeper of merit Our local paper, the Newport *Express*, of August 10th, says :—"Last Tuesday Cushman Gilbert brought in the proof that we can have good fruit the year round in this country. He had some fine Yellow Transparent apples just ripe and also Scott's Winter of last season's growth, which were still sound and of good flavour. With the apple season continuing the year round we ought to be well content." Prof. Budd, of Iowa, speaks highly of it, while at the winter meeting in Montreal, above referred to, in reply to the question, "What about Scott's Winter?" Mr. Shepherd said, "I suppose my trees are about ten years old. So far they have been very satisfactory: the tree is very hardy; its quality is very good. It is a little acid, but it tones down about the middle of January and gets to be a very good quality. It keeps until spring without any difficulty." Mr. Gibb added: "I would like to endorse what Mr. Shepherd says about Scott's Winter. Its keeping qualities are good; it is a little under size, but I have nothing better of its kind." I may add that Scott's Winter is the only keeping apple that is carrying a full crop with me this year I think it is quite as hardy as the Wealthy and as productive. In good land, especially if thinned, it is a full medium in size, but when not properly cared for, and allowed to over-bear, small.—*Vick's Magazine.*

PEAR TREES IN SOD.

BY W. F. MASSEY.

My experience is that pear blight is much less destructive where the trees are kept in sod, and the fertility of the soil maintained by annual top-dressings. While I would not assert that cultivation is the cause of blight, I have no doubt that the tearing of the roots during the season of rapid growth leaves the tree in a weakened condition, favorable to the spread of fungoid growth. Years ago I grew pears in a piece of land which was annually heavily manured and cultivated in vegetables. I noticed that blight almost always followed to some extent the deep plowing in midsummer, made necessary by second crops following the early vegetables. I have never known pear trees grown in properly kept sod to be seriously injured by blight. My experience is confirmed by a brother orchardist, who states that his pears in cultivated land were larger and better looking than those in sod, but that those grown in sod were finer flavored, and that when the blight swept through his cultivated trees, those in the sod escaped altogether.

But it will not do that fruit trees in sod should be neglected. Their proper treatment will probably be more expensive than cultivating them. They should have the grass mown as regularly as a lawn, but never removed, and should have an annual dressing of bone dust and kainit. In other words the fruit crop must be the only crop taken from the land. Treated in this way

the feeding roots will be found near the surface and within reach of all the favorable influences of air, moisture and fertilizers, and will not be driven by the plough to seek sustenance from the cold subsoil. Even the peach is no exception to the rule. The oldest, best and most productive peach tree I ever knew stood in a tough blue grass sod on a lawn. It survived for ten years all its companions planted at the same time in a piece of cultivated land adjoining, and for aught that I know may still be thriving.—*Phil. Weekly Press.*

HOW TO MAKE VINEGAR.

A correspondent wants to know how make merchandise vinegar from ples.

As, ordinarily made the juice of the apple or cider, is put into barrels and then placed in the sun, or where the temperature is high and the contents allowed to ferment and "work" into vinegar. Whiskey, molasses or old vinegar barrels are the best to use, as what little is left of the former contents of the barrels will assist in the formation of vinegar. New oak barrels should not be used, as the tannin in the oak will injuriously affect the vinegar. If the barrels are to be placed out of doors in the sun and air it is quite essential that they be thoroughly painted, hoops and all, to prevent shrinking, and keep borers, etc., from working through the wood and thus cause serious loss.

As the oxygen of the air plays a very important part in the process of fermentation, it is necessary that means of access be provided for this; hence the bung hole is left open, though covered with a piece of mosquito netting or similar material to keep out the insects.

In vinegar factories vats are provided and the liquid is some times passed from one to another, and to still more bring every portion into contact with the air it is made to run through beechwood shavings. These shavings also collect many of the impurities. Shavings from other wood are sometimes used but are generally objectionable, as they may impart unpleasant tastes to the vinegar. We have heard of corn cobs being used as a substitute for the shavings, with good results. The practice is too prevalent of working up the poorest apples into vinegar. The better the apples and the less water is used the better will be the product.

Many formulæ exist for making vinegar by the use of chemicals, but the best article is made out of the pure juice of fruit. Manipulation may vary, but we have given the essential points. —*Rural World.*

BETTER SYSTEM IN MARKETING FRUITS NEEDED.

I wish to say, in a cautionary way, that a man who goes into fruit growing should have some definite plans about reaching his markets. The weakness of our whole fruit growing system, next to slovenly cultivation and handling, is found in a lack of a good system of distribution of our products. There are many sections of the country, north and south. where fruit growing has become unprofitable, largely on this account. We do not reach out widely enough, or our fruit does not bear carrying far enough. Our limited markets break down under the supply, and we lose money from over-production.—*Hon. Parker Earle.*

PRESERVATION OF FRUITS.

Marshall P. Wilder has said that to preserve fruit we must have perfect control of temperature, light and moisture. The apartments where it is expected to keep fruit must be so arranged that the temperature within may be kept cool. If warmth enters the conditions of fermentation are present. Mr. Wilder

did not use ice. He had thoroughly experimented both with and without it. He built his fruit house in a cool, shady place, with the door on the north, and with a thoroughly drained and cemented cellar, with small double windows which he could open and close at pleasure. In such a house he kept fall and winter pears in good condition until March. Apples can be kept at a lower temperature than pears—say thirty-four to forty degrees. J. J. Thomas has said that in such a room as this, and by admitting air on cold nights, and closing the entrances when the air is warm, he has kept some varieties of pears until April, and Baldwin apples into June.

THE VALUE OF FORESTS.

The importance of forestry management in the estimation of older nations, better skilled than we are in economic administration, appears in a volume of Consular Reports extending to 315 pages, lately published by the Department of State. The reports cover the particulars of government control and management of forests in Austria-Hungary, Germany, France, Italy and Switzerland, and are full of matters of great use to students of the subject in this country. Consul-General Jussen reports that no proper returns are published in Austria-Hungary of the profits of Government forests for the whole empire, but for Bohemia alone the clear annual profit is about 14,000,000 florins. The net income from the Prussian State forests, Consul-General Raine reports, stands at about 24,000,000 marks annually. The French net annual income is about 16,000,000 francs, as reported by Consul Roosevelt. Consul-General Alden reports that it is impossible to give trustworthy figures of the revenue and cost of forestry in Italy. According to Consul-General Winchester, the Swiss Confederation derives no revenue from forests. The total value of yield from cantonal forests, however, is about 33,000,000 francs, and the returns from the forests of the Canton of Zurich show a nearly three-fold increase of profit yielded during a period of fifty years of cultivation—from 31-28 francs per hectare (nearly two and a half acres) in 1830–40 to 90.58 francs in 1870-78. Returns in money, however, are the lightest evidences of the true value of the forests. Their influence upon the climate and rainfall, and the consequent benefit to agricultural land and to the public health, are considerations of far greater importance, besides which is the provision of useful and wholesome employment for numbers of the population.—*N. Y. Evening Post.*

Uses of Fruits.

Next in importance to the best modes of cultivation and the selection of the choicest varieties, comes the most approved methods of preparing fruits for use. We would be glad therefore if the ladies, who read this Journal, would make free use of this column for an interchange of ideas on this subject.

APPLES FOR ANIMALS.

Prof. L. B. Arnold writes the following to the New York *Tribune:*

The feeding value of apples is not large; they rank with mangels, turnips, cabbage, and the like. Their food properties are mostly carbo-hydrates, or heat producing, their protein being only about one-half of one per cent., and their nutritive ratio about one to thirty, and hence are most effective when fed in connection with more nitrogenous food, like clover, but may be fed sparingly with grass. They have a higher value than the weight of their food constituents indicates, on account of condimental qualities, and from having a large per cent. of those constituents in a condition to be at once absorbed and appropriated without waiting for any special action of the stomach. Using hay as the unit of

measure, apples compare with it and other common feeding stuffs as follows, per 100 pounds of each:

Hay	$0 50	Cabbage	17
Corn meal	1 12	Apples, ripe	16
Oat meal, bran, and middlings	1 00	Turnips	16
Potatoes	29	Rutabagas	15
Sugar beets	19	Mangels	14
Parsnips & carrots	18	Pears	13

Good ripe apples have a feeding value of not less than eight cents per bushel of 50 lbs., and are as good for other stock as for milch cows. For any one who has stock to consume them, it is as much of a loss to waste good apples as to waste good roots. When fed with reason and appropriate food they are health-inspiring as well as nutritious, and are only injurious when fed immoderately. An experiment in feeding three cows with moderately sour apples, ripe and mellow, for several weeks, at the rate of 12 to 20 lbs. to each cow daily, gave me a finer flavored butter than I ever saw from grain or grass. I have known others to feed them in larger quantity and for a longer time with satisfactory result, and their butter to be not only fine flavored, but to have remarkable keeping quality, and the stock to remain perfectly healthy. I have also proved them to make excellent milk for cheese. The managers of cheese factories have noticed an improvement and increase of milk when their patron's cows have been fed moderately with apples.

QUINCE PRESERVES.

Pare, core and quarter a peck of quinces, then weigh them; put the parings, cores and seeds into a preserving kettle, cover them with water, and boil slowly for twenty minutes; then strain them, put the water back in the kettle and put in the quinces a few at a time, and simmer gently until tender, say five or ten minutes; lay them on a dish; when all are done add the sugar and a little warm water. Let this boil for a few minutes until clear, then put in all the quinces and boil them without stirring until they become a clear garnet, which will be about one hour. Have ready two lemons sliced thin and seeds taken out; put them in a few minutes before taking from the fire.

EVERYTHING IN ONE ROSE.

An old German florist relating his tribulations on this subject to me a few years ago, said: "I have so much trouble with the ladies when they come to buy mine Rose, they all wants him hardy, they wants him dooble, they wants him nice gooler, they wants him nice shape, they wants him fragrant, they wants him moondly, they wants him everydings in one rose, now I have to say to dem ladies, though not what you call an ungallant man, I says, that I sees not that lady that is rich, that is young, that is good demper, that is beautiful, that is healdy, that is smart, that is everydings in one lady, I see her not much."

This was true of the roses when my old German friend told me of his troubles, but since then we have been fortunate enough in getting a new class of roses known as the

HYBRID TEAS.

all of which, by covering with four inches of leaves, put on in December around the roots prove perfectly hardy in most of the Northern States. These now compose many fine kinds, among which are: Dinsmore, bright scarlet crimson, splendid form; Ball of Snow, pure snow white, fragrant; La France, deep pink shading to light rose, splendid; American Beauty, rich, light crimson, grand form, large size, and exceeding all other roses in its delightful odor; Lady Mary Fitzwilliam, rosy blush, globular, large; Pierre Guillot. These are all "monthly," all "fragrant," all "double" and of fine "form," and are

all particularly rich in color. In fact, they are all that the good old German's customers wanted: they are "everydings" in one rose, and besides are all "moondly," "nice gooler," "fragrant and ever-blooming."—*Peter Henderson.*

CAN WE IMPROVE OUR PRESENT VARIETIES OF ROSES.

F. MITCHELL, INNERKIP, ONT.

I am at present engaged in an experiment which will take me some years yet to fully prove the value of, by which I am in hopes that varieties of Roses and other plants, which we now possess, may be vastly improved. I find that in our Hybrid Perpetual roses, (with their intermixed and diverse ancestry) certain plants will show characteristics varying from the ordinary type of the variety to which it belongs. As examples, among others in my own garden, I may mention the case of a plant of Prince Camille de Rohan, which has for years proved itself a true ever-blooming rose, although this variety is generally known as rather a shy bloomer, except at the ordinary blooming season. Again on the other hand I notice a Marguerite de St. Amande, which year after year ignores the fact that this variety is noted as a prolific autumn bloomer, and has never given me one bloom after the first blooming season is over. I might go on and give many other examples where certain individual plants have their own marked variations from the ordinary type of the variety, but these are enough to illustrate the principle upon which my present experiments are based. I have propagated from those plants where I have noted a desirable departure from the original type, and from these I will again select and propagate, until I have fully tested my theory. I would be very glad to hear from anyone who has any knowledge of what it is possible to do in this direction.

CHRISTMAS DECORATIONS.

Very pretty decorations can be made for Christmas by using heads of wheat and oats. They can be mixed with evergreens with good effect. Dried grasses can be made useful in working out some of the smaller designs. Mountain Ash and Bittersweet berries are charming when used in evergreen wreathing. If they are not to be obtained, the seed clusters of the Sumach make good substitutes. If you have autumn leaves in considerable quantities, they will work in charmingly with whatever may be used as the foundation of your decorative work. To use nothing but evergreens gives the place you use them in a somewhat sombre look, and touches of bright color are needed to produce a more cheerful tone, and one more fitting to the season. If clusters of leaves or berries are placed wherever festoons of evergreens are fastened against the walls, the general effect will be vastly more pleasing than it would be if they were not used.

For the altar nothing is prettier, especially by lamplight, than crystallized grasses used liberally against a background of evergreen. They sparkle like gems, and suggest natural frostwork. A most beautiful effect can be produced by making the words, "A Merry Christmas," with letters formed of these grasses against evergreen. The background can be made on a strip of cloth of whatever width is thought desirable, covered with ground pine or hemlock. These are better for such purposes than ordinary pine or cedar. This cloth can be suspended back of the pulpit or stage, and when the light falls on the letters they will seem to be formed from bits of icicles. As the grasses are brittle and easily broken after being crystallized, it is well to make each letter on a foundation of pasteboard and put it in place after the evergreen background has been hung up.—*Vick's Magazine for December.*

Forestry.

THE SCOTCH AND THE AUSTRIAN PINES.

MR. LOUDON speaks of the Scotch Pine *(Pinus sylvestris)* as being one of the fastest growing species of the Pine genus, and speaks of one having attained the height of fifty feet in twenty years. Surely this rapidity of growth which characterizes it in the old country, cannot belong to it here in Canada. The Austrian Pine too *(Pinus Austriaca)*, which in Lower Austria grows to a height of 120 feet, and is considered a rapid grower, seems to us to "make haste more slowly" in our country. We have here at Maplehurst (near Grimsby) several specimens of these two pines growing on our grounds, which are about thirty years of age, and neither variety has reached a height of over twenty-five or thirty feet. Norway Spruces of the same age are from fifty to sixty feet in height, and have left them far behind.

We write in explanation of a reference to these pines on p. 231, where they are compared with our native white pine *(Pinus Strobus)* as being of slower growth, and less handsome in foliage. Probably the statement should be somewhat modified with respect to ultimate size, and no doubt in a large lawn or park a rich effect could be produced by using the dark-green of the Austrian, and Scotch pines to vary the prospect. But if we could only have one, and wanted it near our home, we would choose our own White Pine, with its slender, and gracefully waving foliage.

INFLUENCE OF FORESTS.

The annual address of Hon. Warren Higley, of New York, at the Denver meeting of the American Forestry Congress last year is full of practical and helpful suggestions to all foresters, He gives the following as some of the most important conclusions regarding the influence of forests.

1. The forests exercise an influence upon the climate of the country; they modify the extremes of temperature.

2. They have a decided influence upon the water supply of a country. Clear the forests from the valleys and headwaters of streams and rivers, and these water courses, perennial before, become dry in summer and raging torrents in spring time.

3. Forests exert a beneficial influence upon agriculture by forming a wall of protection to the growing crops when most needed.

4. Growing forests on mountain sides and steep declivities hold the loose soil and accumulating humus in place.

5. Forests in adequate areas tend to preserve the healthfulness of a country or district by their influence on the surrounding atmosphere.

6. Forest products afford the most indispensable and necessary economic element in the industries and prosperity of a nation. The total value of the forest products of the United States for 1880 exceeded $700,000,000. — *The Farmer.*

THE ASH-LEAVED MAPLE.

The best tree to plant for quick shelter, shade and fuel, is the Ash-leaved Maple (*Negundo aceroides*). It is extremely hardy, as is proved by its being found in river and creek bottoms, and on hill-sides which have been protected from the prairie fires; it is sometimes frozen back slightly the first year after starting from seed, but will make a steady rapid growth thereafter.

The tree attains a height of from fifty to sixty feet, with a diameter of eighteen or twenty inches; and although

it cannot be recommended for timber, it is of great value for fuel and shelter. It grows very rapidly, can be trimmed to any shape desired, and will stand the roughest treatment. A syrup and sugar is also made from the sap, approaching the maple syrup in its richness and whiteness; a pailful of sap is said to make half a gallon of syrup.—*American Agriculturist.*

Flowers.

CULTIVATION OF ANEMONES.

BY HERMANN SIMMERS, TORONTO.

THE ANEMONE is a genius of plants of the natural order Ranunculaceae. The name is derived from the Greek word, *anemos* wind, because many of the species prefer very exposed situations to flower properly. The species are numerous and generally beautiful. Most of them flower early in spring. They are natives of temperate and cold climates, chiefly of the northern hemisphere. Anemone nemorosa, or the Wood Anemone, is a common native of all parts of Great Britain, and its white flowers, externally tinged with purple, are an ornament of many a woodland scene and mountain pasture in the months of April and May. Another species, A. pulsatilla, the Pasque Flower, adorns chalky pastures in some parts of England at the same season; its flowers are purple and externally silky. The garden Anemone is a favorite florists flower; the varieties are very numerous, and whole works have been published on them, and their cultivation, which is most extensively carried on in Holland, and has prevailed for a very long period.

It is generally supposed that all these varieties have originated from two species, A. coronaria and A. hortensis or stellata. Both are natives of the Levant; the latter is found also in Italy and the south of France. By cultivation the size of the flower is increased, its form and colours are modified, and many of the stamens are often changed into small petals, forming a sort of heart of the flower. The cultivation of the Anemone requires great attention in order to develop the perfection it has now attained. To grow them most successfully, secure a light sandy soil, plant the bulbs two inches below the surface of the ground, and cover for the winter with a light litter of leaves. Growing them in the house has not proved successful, therefore, I would suggest that the amateur confine himself to growing in the open air altogether. The root consists of clustered tubers, which are taken up after flowering; the plant is propagated by parting the roots or by sowing the seed. In the latter way new varieties are obtained, but the seedlings do not flower until the second or third year. Besides the species which have been named, others occasionally appear as ornaments of our flower garden, such as Anemone Japonica, a most beautiful species, which has only recently been introduced from

Japan. The species of this variety are characterized by the acridity prevalent in the natural order to which they belong, and the rhizomes have been recommended in obstinate cases of rheumatism. Anemone Hepatica, with three lobed leaves, grows wild in most parts of Germany, but is not a native of Britain. Varieties of different colours, and both single and double, should be among the finest ornaments of our flower borders early in spring.

My practical experience in growing Anemones successfully in the open air, has been to plant the bulbs in a box during winter, occasionally watering to prevent the bulbs from drying up, then planting out as soon as the frost is out of the ground, when they are pretty certain to flower, and may remain permanently in the place they are planted.

By Francis Mason, Peterborough, Ont.

WINTER.

"What is Winter? Why, just the ghost
Of the dear old Summer we've loved and lost;
The white reflection of all things sweet,
All the most perfect, most complete;
All that the heart goes out to meet
Lies under the snow and frost."

Yes, we are right into winter; and I often think if we had no winter, but were all summer, we would not be able to appreciate rightly the beauty, grandeur, and reinvigorating process of nature. So it is in our everyday life; without losses and crosses we would not be able to appreciate the sunshine that comes into our lives after the storm has past. The great fault with most of us is that we live too much in the future, instead of making the most of every day, enjoying the streaks of sunshine that slant across our pathway. Come, let us enjoy this fine winter weather, not waiting for the seasons to change. Once more, I wish all my old readers of the *Florist*, as well as the whole family of subscribers to the *Canadian Horticulturist*, *A Merry Christmas.*

CHRISTMAS CHIMES.

Chime, chime, sweet Christmas bells,
Tidings glad your music tells.
Merry Christmas rings for all
From the snow-wreathed steeples tall;
Children's eyes shine bright as stars
Through the cloud-tipped azure bars.
Merry, merry Christmas day,
Holy, happy holiday.

I want in this number to say something about some plants that have a charm for me above many others. Why I do not know, only that I love them, and think there is nothing so enchanting as the rambling, climbing, running vines for the window, or mantel during the winter. I will just name a few that may be easily grown.

ENGLISH IVY,

though slow at first to make much growth, yet, after it is established and growing a year or two, it makes great progress. It may be trained around windows, pictures, brackets, or clocks; and anything else that may be fancied can be done with those branches of the vine, even to forming letters and words on the wall. It will help and give vitality to the ivy to place it outside under the verandah, or in some shady place, during the summer; as the plant grows increase the size of the pot or vessel it may be in; occasionally wash both sides of leaves, stems and body, as the scale insect troubles this plant badly is it becomes once infested with it.

GERMAN OR PARLOR IVY

is much quicker in growth than the above, but is not so easily managed: still it is beautiful when given strings to run on, and will make itself at home anywhere in the light.

SMILAX

is the most graceful of climbers, and cannot be equalled for its beautiful green foliage and peculiar waxy formation. Though of a slender growth it is strong and wiry, and is much used in the formation of wreaths and other floral work: it is even used for the trimming of dresses at parties; indeed I do not know what florists would do without smilax. The plants may be purchased from any florist at a very reasonable price, or seed may be purchased and sown at any time; but plants are preferable for the amateur. Give them long strings to run on.

Vines for the window, and for the hanging basket, will be continued in the Jaunary number of this magazine.

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.

Time to Renew.—It will greatly favor the Editor if all subscriptions for 1888 could be sent in this month, so that he may know how many copies to print for the new year. Remittances should always be sent by registered letter.

Baskets for Peaches.—Cuts representing the packages for peaches referred to on page 248, and kindly furnished by the writers of that article, came to hand just too late for use in November

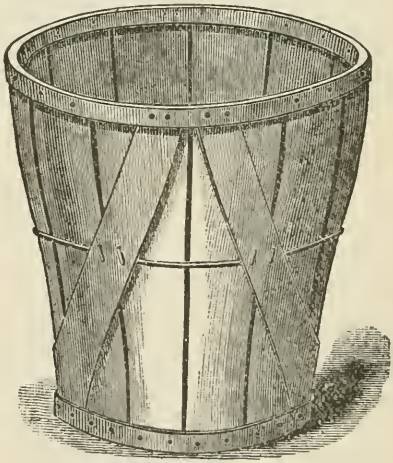

FIG. 1.

Number. The slat or truck basket, that is now commonly used in New Jersey and Delaware, is shown in Fig. 1. We have tried this basket in shipping peaches by the car load to Toronto

and Montreal, but we found that express men would not handle it as carefully as they would the 12 qt. basket with a handle, shown on p. 152; and in packing them on platforms, or in unshelved cars. they would set one on another, to the great damage of the fruit. The flat handle basket may be piled several deep without bruising the fruit, if care is taken to set every alternate pair at right angles with the former two. This latter basket is universally used by our Canadian peach growers, costs no more than the truck basket referred to, and is in our opinion the most useful basket.

For very choice samples of early Crawfords, no doubt the four-quart-basket crate, as shown in Fig. 2 is most desirable. Indeed it or a very similar

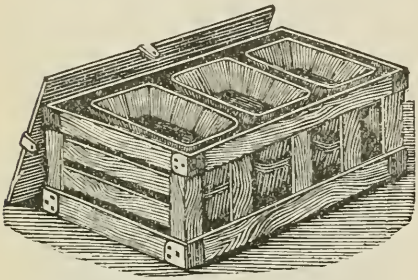

Fig. 2.

crate has been used by some of our peach growers at Grimsby, and they speak well of it for fancy fruit, but even these growers use the 12 qt. basket for their main crop.

The paper cell crate is a very ingenious contrivance for carrying extra choice peaches, of uniform size, carrying each one in a separate cell just as eggs are sometimes packed for shipment. Our plan with such fruit is to row them in the 12 qt. basket, three layers of four peaches wide and eight long, thus getting about one hundred extra choice samples in a basket. Such fruit netted us from $1 to $1.50 per basket during the past season.

Baxter's Red, or the Pound Apple. — A sample of this beautiful apple was received from Mr. Geo. Leslie, of Toronto, It is a very large apple, about the size of the King, and much the same in general appearance. The calyx is closed in a deep basin; the color deep red with yellow specks; the stem, short slender and deep set, in a slightly russeted cavity. From its large size this apple has been called the "Pound" apple, but the name Baxter after its originator, seems to be its proper one.

The tree is said to be perfectly hardy about Ottawa, and if it is an abundant bearer, may prove a most valuable apple for export.

Macklim's Seedling Pear also sent in by Mr. Geo. Leslie, has every appearance of being a valuable winter Pear. It is too early to test its quality, but its appearance is in its favor. The fruit is large, pyriform, having some resemblance to the Vicar, about four inches long, besides a stout stem of two inches obliquely inserted without depression. Skin yellowish green with small brown dots. Calyx large, closed, in a shallow corrugated basin. Said to have originated near Markham, Ontario.

The Kieffer.—A dwarf tree of this variety at Maplehurst, the home of the Secretary, has borne this season several beautiful samples. In point of appearance it is everything that can be desired, and the tree is a fine grower. But alas! the disappointment with which one attempts to enjoy the eating!

The merits of this pear were discussed at the meeting of the American Pomological Society, at Boston. It was maintained that it was valuable in the Southern States at least for cooking; but it was acknowledged to be of little value at the north. It was agreed that the name should be pronounced as if spelt Keffer, with e short.

Best table Pears.—The *Country Gentleman* gives the following list of pears selected with regard to flavor, and regardless of productiveness or market value: Seckel, Bosc, Belle, Lucrative, Sheldon, Josephine de Malines, Dana's Hovey and Grey Doyenne. The Rostiezer is classed as *almost* equal to the above list, a pear which in our opinion is *fully* equal in quality to any one of them.

Peaches for Succession.—The same Journal gives the following list of peaches which were grown at Albany, and gave a constant succession of ripe fruit each day from the 25th of July until the middle of October: Waterloo, Alexander. Briggs Red, Early Beatrice, Early Rivers, Hales Early, Early York, Cooledge, Troth, Morris White, Crawford's Early. Foster, Old Mixon Free, Stump, Crawford's Late, Ward's Late, Smock, Salway.

HORTICULTURE FOR WOMEN.

Miss Sara Smith read a paper on this subject before the Massachusetts Horticultural Society on the 29th of January last. She said among other things:—

"Do we think, when walking in our beautiful gardens, of the many New England farms and homes without gardens? Do we think that there are daughters to inherit these places who are not taught as we are every day by the beauties around us, and who do not learn to know and love them?

"School days over, the excitement of graduation, the crowded house, the applause, all are ended, never to return. No more city life, no more railroad rides, no more excitement. A quiet coming home, and to a home which perchance may not be the home of beauty, of luxury, of comfort, or pleasure, that many can welcome their daughters to, but a home such as we know hundreds of our brothers have on these bleak though beautiful hills, and damp yet smiling valleys of New England. Totally ignorant of what might make such homes abodes of pleasure, it seems a coming to a round of cooking and cleaning and small economies that fret day by day. What a dull routine! Seldom company to enliven, no money except for the most essential needs—a weary, dreary home—a tired mother, a silent father, an absent, or worse, an indifferent brother, work that crowds, no luxuries, no garden, even the songs of the birds recall the songsters of the city parks and have a homesick sound to her, and so comes the sad, final break with home.

In all the culture of soil and fruit and flower and flocks, is there no pleasant place, no welcome duty for these daughters hands? Is there no way that they may be taught that they, too, have a mission—a heaven-given mission—on a farm?

What we want now is not this higher education; it is a new one; an education in horticulture and home culture that shall make a happier girlhood; happier because hands are full and bodies healthy, and brains less strained for book lore; more alive to Nature's truths and vivified with a practical knowledge of what goes to make health, happiness, home and wealth. Among all the schools of our land there is not one to offer our girls this."

The tendency of our age is toward extremes; and every girl in our land is expected to go through the same round of French, Music, etc., whether fitted by taste for these studies or not.

No doubt very many of these would be happier and more useful if a portion of the time spent in the study of accomplishments for which they have no taste, were devoted to the practical study of the care and culture of flowers and trees, and to the kindred science of Botany.

Scott's Winter.—Mr. Charles Gibb, of Abbotsford, sends a sample of this very promising winter apple for the North. It is a very handsome apple, and a native of Newport, Vt. Dr. Hoskins of that place says of it: "The value of

this apple grows upon me every year. With the exception of Bethel, it is the only true "iron-clad" that is a long keeper, while it is an early and prolific bearer. It surpasses the Wealthy in the same orchard in vigor, and in endurance of climate vicissitudes, and produces about as much marketable fruit, which keeps well into June, and sometimes through July. It is medium in size (small on poor land), round, very brilliant red in color, keeping until June, without difficulty, and after March very good in quality, being crisp and spicy, but too tart for some people."

HAT-BIRDS

"One London dealer in birds received, while the fashion was at its height, a single consignment of thirty-two thousand dead humming-birds, and another received at one time thirty thousand aquatic birds and three thousand pairs of wings."

Think what a price to pay,
Faces so bright and gay,
Just for a hat!
Flowers unvisited, mornings unsung,
Sea-Ranges bare of the wings that o'er swung,
Bared just for that!

Think of the others, too,
Others and mothers, too,
Bright eyes in hats!
Hear you no mother groans floating in air.
Hear you no little moan—birdling's despair
Somewhere—for that!

Oh, but the shame of it.
Oh, but the blame of it—
Price of a hat!
Just for a jauntiness, brightening the street,
This is your halo, O faces so sweet—
Death, and for that!

Faith and Works.

Open Letters.

THE BROCKVILLE BEAUTY AND THE WINTER ST. LAWRENCE.

Montreal, Oct. 17, 1887.

SIR,—I procured my original trees of the *Brockville Beauty*, twelve or fourteen years ago, from James Cumming, of Lyn, (near Brockville, Ont.) I regret that I cannot send you any sample of this apple. It is a September apple, and comes in directly between Duchess and St. Lawrence, hence I prize it as filling a gap. It is a very handsome apple, above medium in size, and the quality is better than Duchess. The tree appears to be quite hardy here.

I mail you to-day three samples of the *Winter St. Lawrence*. They are scarcely fair samples, as the fruit averages larger, but it was all I had left. I have no trouble to get $3.50 per barrel for *Winter St. Lawrence*, and I have shipped several cases to England this season. Yours truly,

R. W. SHEPHERD, Jr.

FRUITS TESTED IN LAMBTON

Mandaumin, Oct. 17, 1887.

SIR,—The first plant I received from the Association was the *Eumelan Grape*, which was hardy, easily propagated, and produced plenty of grapes good to eat, but for three years in succession, beginning with 1882, the fruit mildewed and the leaves rusted and dropped prematurely, as did also those of the *Salem*: some of the plants nearly dying out. My other vines, of which I have a number of kinds, were not affected in that way. Last year both these kinds bore some good fruit, and this year there was a full crop of excellent fruit and no sign of mildew. The *Prentiss* had grown well, and had some beautiful light green fruit that tasted to me much like the *Delaware*, but was much more showy. The *Niagara* received this spring has grown 44 inches. The *Flemish Beauty* is healthy, and has been much slower to bear than Clapp's Favourite, Anjou,

and other kinds. I have *Souvenir de Congress*, that has borne four times as much in the third of the time. *The Ontario* and *Grimes Golden* are both what I call good apples. We have found *Saunders' Raspberry* much more prolific than the Cuthbert, and other famous kinds, and does not run all over the garden like them. We do not reckon the *Gregg* any improvement on Mammoth Cluster, but the reverse. We have not many kinds of strawberries, but the *Arnold* seems to me as good as the best we have, and just as good a cropper. The *Fay* is a good currant, and the bushes do not break down with storms like the Versailles.

Yours respectfully,
DAVID NISBET.

FRUITS AT THE NORTH.

Brantford, Ont., Nov. 3rd, 1887.

SIR,—I have lately returned from an extended trip to the south shore of Lake Superior, and I found the Duchess of Oldenburg thriving the best of any apple in that region. I gathered one from a tree grown by Mr. Gattis, an old friend, as fine as I ever saw, at Eagle River, Canton Mines, where you can see across the lake on a clear day to Thunder Bay on the north shore. Cherries also do well, although I was too late to see them. Mr. G. told me he had a good crop of pears also, but could not find the names. I also saw the same apples at different points. The Siberian crabs are the most grown. I saw the question, What are the best and most likely sorts to stand the climate of Manitoba?—a very pertinent question for that northern clime. I have no doubt but the kinds grown in northern Russia, or some of them, would stand the test. The black knot in my plums and cherries was very bad this season; have cut it all off, not knowing any other remedy. There has been a complete absence of the black aphis so bad last year on black currant and cherry trees, and which killed one of the latter for me, a fine young tree, with cherries half grown. I discovered say forty borers in a large English cherry tree, which very nearly girdled it just below the surface. This is singular, as I never saw one before in a cherry tree, nor ever heard of it.

Yours truly, C. JARVIS.

THE VIRGINIA CREEPER

USEFUL AS WELL AS ORNAMENTAL.

A Letter from Mr. Cockburn, since the Gravenhurst Fire.

Gravenhurst, Ont., Oct. 15, 1887.

DEAR SIR,—I write to compliment you on what I call your "Muskoka" number of the *Horticulturist*, and thank you for your kindly mention of my name. Of course I have lost every flower and plant I had gathered by fifteen years' very close collecting of what I thought the best to be had for money; all went to smoke in less than five minutes. It was simply indescribable. The Virginia Creeper on my old wood shed saved the office in which I am now writing. The thick mat of vine and foliage on the roof held the water, and prevented the roof from igniting. All my back volumes of the *Horticulturist* are burned, and I wish you would let me know how many years' bound volumes you have, so that I can send to you for them, as I do not like to be without them.

Yours respectfully,
J. P. COCKBURN.

GRIMES GOLDEN.

Trenton, Oct. 17, 1887.

SIR,—Respecting Grimes Golden as a dessert apple, it is one of the best trees, a good grower and hardy. The fruit is not sufficiently attractive for market, and often spots badly.

I am, very truly yours,
P. C. DEMPSEY.

Lindsay, Oct. 18, 1887.

SIR,—Grimes Golden Apple grew well with me for several years. It bore fruit early, and continued to produce a moderate crop every year. In addition to its good bearing qualities, I was much pleased with the excellent quality of its fruit, especially about Christmas, when it seemed to be at its best. The colors, too, at that time, is very beautiful.

Two years ago the tree commenced to fail. Last year it gave symptoms of early death. This year will be its last. But little fruit this year.

I have made enquiries of other growers in this vicinity. Their experience is about the same as mine. All agree that the tree is not suitable for this climate.

Yours very truly,
THOMAS BEALL.

FLOWERING OF TUBEROSE BULBS.

SIR,—I have noticed at different times in Horticultural and Agricultural publications, Florists Catalogues included, a statement concerning the flowering of tuberoses, that after they have flowered once, the old bulb may be thrown away, as they will never flower again, but if desired the offshoots may be planted, and may make flowering bulbs in two or three years. Being a little skeptical about the matter, and wondering who had given them a trial, I purposed to test the question for myself. So last fall I had a few bulbs that flowered, and when taking them up I allowed a little piece of the old flower stem to remain attached to each bulb, as a mark to guard against mistake. I planted them in a bed by themselves, and labeled them. The old stem by this time was crowded to one side just like that of most lilies, or even that of an onion after going to seed, and a new centre is formed. I removed the offshoots before planting, several of which flowered the present year. My old bulbs flowered beautifully, continuing in bloom for about six weeks, until the frost cut them down the other night. In fact, neither myself nor my friends could see any difference between the old bed and the new one, growing but a little way off. Such has been my experience with old tuberose bulbs, and I intend still further trying them another year.

SAMUEL HUNTER,
Hartly, D.C., U.S.A., Oct. 19, 1887.

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.

---

80. The Quince.—*Can the Quince be successfully budded on apple seedlings?*
F. G. H.

We have never tried the experiment, and know of no one who has. The Quince is propagated so readily either by making cuttings this fall, and burying them until spring planting time, or by planting the suckers, that we see no reason for budding it upon the apple.

81. Gooseberries.—*What is the matter with my Gooseberries? The leaves on the tips of the branches are curled up into tight little bunches. It affects the Houghton most.* A. J. WRIGHT,
Lakefield, Ont.

We cannot answer without seeing samples of the leaves. Probably an insect is at the bottom of the trouble. If you observe the same thing again, please enclose us some samples.

QUESTIONS ANSWERED BY MR. F. MASON.

Mrs. B., Stratford, asks how to treat

Wallflowers so that they will bloom this winter.

What is the Easter Lily? Is it the Calla?

In answer to the first I would say that wallflower plants grown from seed last spring, planted out during the summer and taken in in the fall, should flower without fail in February. The most simple treatment is all that is necessary to ensure flowers; they require no pinching back, in fact only to be left alone all summer, with the exception of giving water.

The Calla is not what is called the Easter Lily, but Lilium Harrisii and Lilium Candidum are both known by that name. The Calla is not, properly speaking, a lily at all.

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.

REPORT OF THE OHIO STATE FORESTRY BUREAU 1886.

We have received through the politeness of Mr. Adolph Leue, Secretary to the Ohio State Forestry Bureau, the second Annual Report to the Governor of Ohio. It is an octavo volume of 222 pages treating largely of the forest trees growing in that State, shewing their distribution, usual size, and the purposes to which the wood is applied. It contains also many valuable papers relating to different matters pertaining to the subject, such as Profits of Forest Culture, Joint Stock Forestry Associations, Raising Forest Trees from Seeds, Groupings in Forest Plantations, Preservation of Woodlands, Roadside Planting, Arbor Day, Forests and Floods. The Relation of Forests to Agriculture, &c. &c.

It is a most valuable Report, full of practical matter to us as well as to the citizens of the State of Ohio and Mr. Leue will please to accept our most sincere thanks for his kind remembrance.

From this report we learn that the State of Ohio has a State Forestry Bureau, composed of three commissioners, who hold office for six years, their terms so arranged that one expires every two years. This Bureau is charged with the duty, among others, of making an annual report to the Governor of the State, which shall contain the results of such investigations as they have made, and such other information as the Board may deem necessary for the promotion of forestry in the State. The Bureau has commenced an investigation into the subject of forest fires in the State, the results thereof are promised in the next report.

When will sufficient regard be had to the preservation of our forests by our legislators to take similar steps to preserve our valuable forests from destruction? Forest fires are of annual occurrence in Canada, laying waste large quantities of valuable timber land. It is high time energetic measures were taken to stay this loss.

TRANSACTIONS OF THE WISCONSIN STATE HORTICULTURAL SOCIETY includes addresses and papers presented, and proceedings at the Summer and Winter Meetings for year 1886-7. H. C. Adams, Madison, Wis., Secretary.

This Seventeenth Annual Report is a fine volume of 279 pages, bound in cloth, uniformly with its predecessors. It contains interesting papers and discussions upon such subjects as the following:—History of some of our Cultivated Fruits, the Maple Bark Louse, Ornamental Trees, Beautifying our Homes, Injurious Insects, Teaching Horticulture, Forestry, Life of Women on Farms, Handling and Marketing our Fruit, etc.

The Summer meeting was held at Janesville, where an interesting diversion was made in a visit to the fruit of farm of Mr. F. W. Loudon, the home of the Jessie Strawberry. Mr. Loudon gave an interesting account of his method of raising seedling strawberries, and reaffirmed his statement that the Jessie had yielded at the rate of four hundred bushels per acre.

The report contains a great deal that is attractive to the popular reader, as well as to the professional horticulturist, and the meetings appear to partake more of that character than do our own.

It is an unfortunate feature of the book that so many typographical errors should have crept into the text uncorrected.

BIENNIAL REPORT OF THE STATE BOARD OF HORTICULTURE of the State of California, for 1885 and 1886. B. M. Lelong, Secretary, 220 Sutter St., San Francisco.

A closely printed volume, bound in cloth, containing 583 pages. It is full of matter of the greatest interest to fruit growers on the Pacific coast, treating in a scientific as well as a practical manner of the cultivation, marketing, insect enemies, and diseases of the orange, fig, olive in particular, and also to some extent the peach, grape, pear and other fruits grown by us.

The benefits of organization are clearly shown in the successful efforts of the California Fruit Union in securing favorable contracts for special fruit trains to deliver their fruit in eastern cities. These trains run on passenger time, and the rate is $300 per car.

WISCONSIN FARMERS INSTITUTES, 1887. Bulletin No. 1. W. H. Morrison, Supt., 11 Capitol, Madison, Wis. Cloth, 230 pages.

The wisdom and energy with which the Farmers' Institutes in the State of Wisconsin are conducted, is well evidenced by the production of such a volume as this, containing the cream of the papers that were read at the meetings during winter of 1886-1887, with some of the discussions thereon. The culture of fruits is one of the topics of discussion, and some fourteen pages are given to it. All the discussions are purely of a scientific and practically useful character, and nothing in the way of political discussions are allowed, which we consider a commendable feature.

CIRCULAR AND PROGRAMME of the Joint Annual meeting of the Michigan Horticultural Society, and the Michigan Beekeepers' Association, at East Saginaw, December, 6. 7, 8, 9, and 10, 1887. C. W. Garfield, Grand Rapids, Mich., Sec. of the Michigan Horticultural Society.

PRIZE LIST MASSACHUSETTS HORTICULTURAL SOCIETY. Spring Fowering Bulbs and Forced Vegetables, Jan., Feb. and March 1886. Boston.

T. TAKENAKA & Co.'s PRICE LIST of the Japanese Vegetable, Flower, Fruit, and Tree Seeds, and Plants, Flowering Bulbs &c. The Mita Seed Raising establishment, No. 1 Shikokumachi, Mita, Tokio, Japan.

CIRCULAR WARFIELD No. 2 STRAWBERRY. B. C. Warfield, Sandoval. Illinois.

Humorous.

A gardener who recently received a sound rating from his master, a landowner of Normandy, turned indignantly upon him with the remark, "You need not treat me like a common fellow. I'd have you to know I am the nephew of Louvel, who assassinated the Duc de Berry."

The strawberry does its work on business principles. It sends out runners this year to work up business for next.—*Western Plowman.*

She: Have you seen the Chimpanzees up at the Park? *He:* No, are they in bloom now? *She:* Are what in bloom? *He:* Why the Jim Pansies.

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