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DR. SLAVEN'S GARDEN, ORILLIA.

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# THE CANADIAN HORTICULTURIST.

VOL. XXI.

TORONTO,

1898.

MARCH.

NO. 3.



## THE ORCHARDS AND GARDENS OF ORILLIA.

**F**ORTY years ago, the district of country now known as East Simcoe was a *terra incognita* to most of the rest of the world.

Lumbermen were aware that there was still there a good deal of first-class pine, white oak, and other valuable timber; but it was generally supposed that the land was little fitted for agricultural, and not at all for horticultural purposes; therefore when, a few years ago, the Fruit Growers' Association annual meeting was held in the town of Orillia, a most agreeable surprise was awaiting the officers and visiting members, in the magnificent display of apples and other fruits which had been provided for the occasion by the local Horticultural Society, a display which had never before, nor has been since equalled at any winter meeting of the Association. There are now but few farmers in East Simcoe without their orchard of apple trees, varying in size from a half to five acres in extent, whilst in the vicinity of Orillia the apple crop has grown to be

one of commercial importance, and is yearly increasing in quantity and quality. All but the most tender varieties of apples are successfully grown, the hardier fall sorts, such as Duchess, always yielding heavy crops of most excellent fruit; the Wealthy is also proving a valuable variety, being hardy and productive; American Golden Russet, Snow and Pewaukee are also hardy and do well.

Of course, all the early apples, such as Red Astrachan, Yellow Transparent, etc., are suitable and give good returns.

A first-class hardy winter apple, to follow the Wealthy, would be a great boon. In some localities the Spy succeeds well, in others the Wagener (a grand dessert apple), King of Tompkins, etc. But none of them can be entirely relied upon. The Wolf River, lately introduced, has fruited pretty well during 1897, is a very handsome and fine apple, but belongs to a class already well filled—fall or early winter.

All the small fruits grow to perfection,



FIG. 1294. — "SOUTHWOOD HALL," HOME OF MR. HENRY PELLIATT.

*THE ORCHARDS AND GARDENS OF ORILLIA.*



FIG. 1295.—HOME OF W. J. FORBES, ORILLIA.

and are largely cultivated for local and outside markets; they are shipped chiefly to the north.

Fifteen years ago Orillia depended chiefly on the Oakville and Niagara districts for small fruits; gooseberries were almost quite unknown, whilst now, the market is often glutted with the local product of strawberries, raspberries, currants, gooseberries, etc., equal in quality to any which can be produced elsewhere.

Orillia is one of the most delightfully situated towns in Ontario, bordered by two beautiful lakes—Simcoe and Couchiching—the latter interspersed with numerous islands, and being easy of access, affords unexcelled facilities for boating and fishing; a public park on the lake shore, and right in the town, prettily wooded and laid out with walks, drives, tennis courts, etc., make the town additionally attractive.

Flourishing yacht and canoe clubs afford additional facilities for enjoyment on the water; both clubs hold regattas during the summer.

Orillia offers many natural attractions as a place of summer resort, and many Toronto gentlemen have delightful residences there, where with their families they enjoy the summer, and hospitably entertain their many friends not so fortunately placed. Mention may be made of Mr. Henry Pellatt, of "Southwood Hall," Mr. Edin Heward, of "Edinswold," Mr. A. A. Allan, of "Strathallan," The Messrs. Kilgour, etc.

Amongst the principal apple growers may be mentioned Messrs. R. A. Dewart, J. W. Wainman, Joseph Dunn, J. Ryerson, T. A. Millichamp, C. S. Harvey, W. Fisher, and there are many others, on a smaller scale, living in the town: Messrs. J. H. Tool, A. Fowlie, G. J. Bolster, C. L. Stephens; all these



FIG. 1296.—“STRATHALLAN,” ORILLIA, OWNED BY MR. A. A. ALLAN.

## THE ORCHARDS AND GARDENS OF ORILLIA.

gentlemen are members of the Orillia Horticultural Society, which was organized eleven years ago, and which, by holding exhibitions, offering many and liberal prizes and other means, has done much to foster and promote fruit growing in the district. Mr. C. L. Ste-

phens has been Secretary of the Horticultural Society since its formation; he lives in a delightful place on the lake (Couchiching) shore, to which a flying visit was made by many of our members on the occasion of the meeting.



FIG. 1297.—"THE HERMITAGE," HOME OF MR. C. L. STEPHENS, THE SECRETARY.

### PRUNING GRAPE VINES.

THE trouble with an unpruned vine is that it bears too much fruit, and this means poor quality. Let us take a thrifty Concord vine to illustrate this matter. At the end of the season such a vine, in good soil, kept well tilled, should have somewhere near to 300 fruit buds on the new growth of the past season. Now, a good Concord vine should bear about twenty pounds of first-class fruit each season; if it does this steadily year after year no more should be expected. To bear that amount of fruit, not more than fifty buds are required. But as we have seen our vine has about six times that number, hence many in excess of the

need. Leave the vine untrimmed and the 300 buds will overbear and the yield will be very inferior. Prune to reduce the number of buds to fifty and a good crop of fruit may be expected. That is the simple proposition needed for guiding your pruning knife. Cut away, therefore, enough of the young canes to bring the buds down to the right number. A good rule with Concord is to remove all the canes but five, and cut these back to nine or ten buds each. The Delaware class should have even less. Prune and tie up so as to have a good distribution over the trellis. The pruning should not be deferred beyond this month if it can be helped.

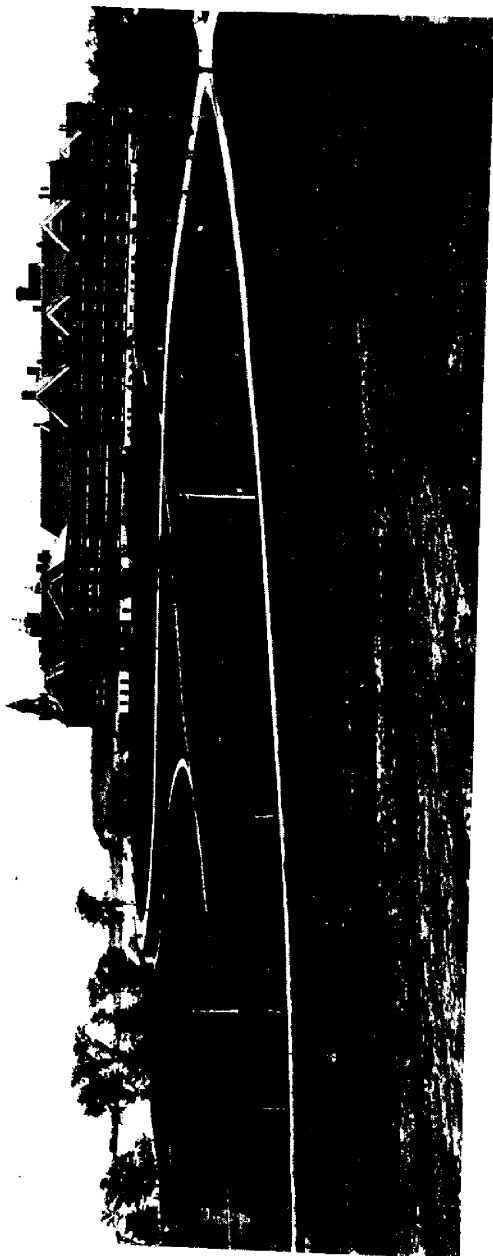


FIG. 1298.—PROVINCIAL ASYLUM FOR IDIOTS, ORILLIA SHOWING PARK.



## TOMATOES FOR ENGLISH MARKET.

SIR, In reply to your favor of the 20th, inst., would say, That of all varieties of tomatoes that I am acquainted with I would recommend the Dwarf Champion and Dwarf Aristocrat as coming within the needed qualification required for your purpose.

Where the market demands a small tomato there is no variety with more good points to recommend them than the two named. First, the plants being of a very peculiar dwarfish habit, standing upright like sturdy little trees, make them very easy to grow in the greenhouse or hot-bed, and when ready for transplanting do not wilt like other slenderer varieties but commence growth at once and make strong upright bushes that usually need no trimming or tying up. Secondly, they can be planted closer together than the common varieties on account of their upright habit and holding their fruit up from the ground without the aid of stakes or racks; much expense is saved in their cultivation. Thirdly, they are of perfect shape and smoothness, and fourthly, they ripen quite early in the season being the earliest of all smooth varieties. There are a few varieties that may ripen a little earlier, but they will always have a large proportion of their food quite rough, whereas a rough fruit on either of these kinds is very rare. I also consider them much less liable to be afflicted with blights and diseases than other varieties.

The Dwarf Champion is of a dark red or purplish color, and the Dwarf Aristocrat is of a light red or scarlet color. In our western markets the demand is

for a dark red colored fruit, but in some of the eastern markets the light red color is preferred. You will have to find out the color demanded by your market and choose accordingly. The color is the only difference between the two varieties. I understand that a yellow variety of the same class has lately been put upon the market, but I have not tested it as yet. As to the early Michigan, I have heard it well spoken of, but the only plants I have ever seen of it did not impress me very favorably with it, and so I would not consider it nearly as good a variety as the two mentioned.

For a home market, that like our American markets, likes a very solid large tomato, I know of none, which, taking all points into consideration, are equal to the two new ones, Rex and Gloria. The first, a dark red very large sized fruit; the latter, not quite as large a fruit, but yet large enough to be classed among the large ones, and of a light red color; both are very firm solid flesh and of superior flavor.

The copy of January number of CANADIAN HORTICULTURIST at hand, and well pleased with it; shall look forward with pleasant anticipation for its monthly visits.

It is our ambition to make our grounds occupy the same place as the original home of new vegetables, as those wonderful grounds of Luther Burbank's do as the home of new and wonderful fruits.

L. H. READ.

*Grand Rapids, Wisconsin.*

## THE KIEFFER PEAR.

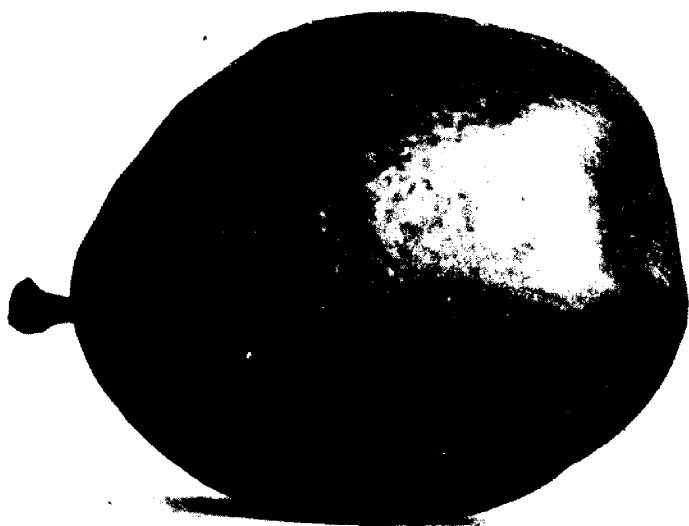


FIG. 1299.—KIEFFER PEAR.

SO much has been said and written, both for and against the Kieffer pear, that we hesitate to make any further statements until the question of real commercial value has been more definitely stated. That it is unequalled in productiveness, cannot be disputed. One tree two years planted, at Maplehurst, bore in 1896 two hundred pears, and a small orchard near by was, in 1897, literally breaking down with immense clusters.

It varies considerably with different soil and treatment, sometimes growing large and fine, with excellent color, and lacking both in size and appearance.

Gathered early and ripened indoors, one is surprised at the beautiful rich golden hue it takes on, which goes a long way to command a high price in any market. As a shipper it is unequalled, continues firm and hard in texture long after its appearance would

indicate ripeness. Like the Ben Davis apple it is showy on the table, but must be eaten under the most favorable conditions to be enjoyed.

Some sample cases of this variety have already been forwarded to Great Britain, and brought about \$3.00 per bushel case, and yet the salesman discouraged their shipment because he thought the pear could not be sold a second time to the same persons.

The variety originated with Peter Kieffer, near Philadelphia, and was a supposed cross between the Chinese Sand and the Anjou. It matures in October and November.

Meehan's Monthly takes rather a favorable view of this variety as a market pear, as is shown by the following extract :

The Kieffer pear, an accidental seedling found by an humble French gardener residing in Germantown years ago, has marked a new era in pear cul-

## TOMATO CULTIVATION IN WEST MIDDLESEX, ONT.

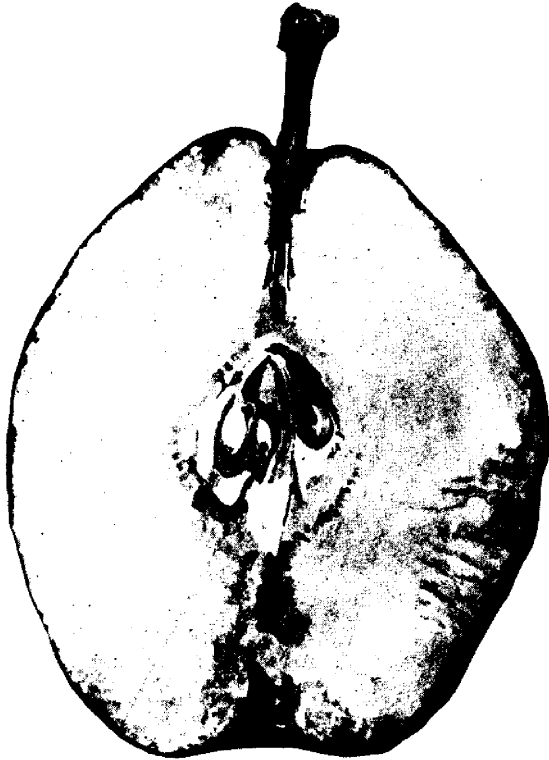


FIG. 1300.—SECTION KIEFFER PEAR.

ture. Although of poor quality in the hands of those who have little experience in the ripening of pears, it is of superior excellence when this know-

ledge exists; but its great advantage over other pears is that, like the apple, it may be stored and barrelled and got safely to market, so that pears are now on our fruit stands the greater part of the winter season. A few years ago, it was a rare sight to see a pear in winter, except on the table of the amateur grower, who carefully stored them away in cellars. It is getting a wide reputation all over the world. In Florida, they find it, with its allied variety Leconte, the most profitable of all pears. It has even safely been introduced into Southern Africa, where the pear growers are looking forward to their first experience with it the coming winter.

ASPARAGUS.—Likes a night temperature of 60 degrees. partial shade, air, and plenty of root room when established.

## TOMATO CULTIVATION IN WEST MIDDLESEX.

**E**XPERIMENTS of three acres in cultivation. The hot beds were prepared about the middle of March with sashes six feet by four feet, with four loads of horse manure to each sash, leaving the manure eighteen inches on each side of the frame so as to keep out all frost. The seeds were sown in drills about six inches of rich loam, on April the 1st and transplanted at once into cold frames three inches apart each way, the manure on each side of the hot bed being cut off with a spade and dug in about six inches

deep into the cold frame. The plants were removed to the field by cutting with a knife between the rows each way, and then using a spade to lift them into trays leaving a nice ball of earth to each plant, this was done about the tenth of June. Noticing the tomato blight on a few plants, whilst in the cold frame, I completely destroyed it by spraying with the Bordeaux mixture. The field being new ground and thoroughly worked up and marked, holes were dug with a hoe and a handful of chicken manure was placed in each hole to give the plants a

start. There was no rain for ten days after planting, but they did not show the slightest signs of wilting; cultivating both ways once a week was followed and a handful of ashes given to each plant, but progress was slow owing to cold weather till the middle of July.

The varieties planted were Maule's Earliest which were too rough but a wonderful cropper; the distance between each plant four and a half feet.

Ignotum a nice smooth tomato, but not prolific enough, distance between each plant was four and a half feet.

Livingstone's Favorite was fairly profitable, and planted five feet apart.

New Imperial were by far the largest and best croppers, and the vines should be planted seven feet apart; over a bushel each was picked off some plants. I also tried some of Carter's Duke of York, one of the best English varieties; they were too small for canning purposes, but would make good exporters to English markets as the smaller toma-

atoes are more in demand than the large. The plants were trimmed on the roadway with single stems or cordons and tied to stakes, the rest of the field was left to natural growth, except a half acre which was trimmed to a single stem and left them lying on the ground which produces earlier fruit.

The method adopted by saving the fruit from frost was by pulling up the vines and placing them in heaps, then at leisure shaking all the fruit off and collecting in large heaps near the cold frame, then culling out the ripest and putting them under the glass when they will ripen in a few days and be ready for market. By continually going through your heaps this way all the fruit will in time ripen, and will not heat enough to injure them; keep them covered with the vines to protect from frost. The product was sold to a canning factory and realized fair profits.

W. SHAW.

*Delaware P. O.*

## RASPBERRY CULTURE.

**R**ASPBERRIES may be successfully grown upon any land that will produce a good crop of roots, although a dark sandy loam is preferable to all other soils. To obtain the best results the land should be in a good state of tilth, and should be thoroughly drained either naturally or artificially, as a cold, wet soil is particularly addicted to the development of fungous diseases to which the raspberry is very subject. A clover sod, or land that has previously grown a hoed crop, is most suitable, and if possible it should be plowed in the fall and a heavy coat of stable manure turned under to supply nitrogen. In the

spring a liberal top-dressing of wood ashes should be applied to furnish phosphoric acid, lime, and potash; of the latter the raspberry is a large consumer. Then the land should be thoroughly pulverized with a disc harrow and a smoothing harrow, when it will be in the best possible condition for receiving the plants. These should be procured from some reliable near by grower, as personal observation and advice can thus be had as to the varieties most suitable for your particular soil and climate, and plants thus obtained will take root much more readily than those which have been shipped a long distance.

In our estimation spring is much pre-

## RASPBERRY CULTURE

ferable to fall for planting, but the work should be done just as soon as the ground can be put in good condition, as there is then less danger of the young shoots being broken off which begin to

half hour's exposure to wind or sunshine may prove fatal to them. One mistake which is usually made in setting out small fruit plants, is in placing them too close together. The rows for rasp-



FIG. 1301.—PROGRESS RASPBERRY.

grow very early in the season. When conveying the plants from the nursery to their new location, care should be taken to keep the roots constantly covered with damp straw or blankets, as a

berries should be seven feet apart, and should be as long as possible to facilitate the work of cultivation. The plants should be four feet apart in the rows, but the red varieties may be allowed to

form a new stand of canes between each two plants set; all others should be treated as weeds and cut out. This distance allows ample room for horse cultivation, and economy of time and labor is of more importance to the general farmer than a few additional rods of land. Before setting the plants the roots should be immersed in a pail of water, and this will cause the fine loose earth to adhere to them, when they will start growth much more readily. The holes for the plants should be made sufficiently large and deep to admit the fibrous roots without crowding, and the soil should be firmly compacted about the canes. This firming of the soil is an important point in setting out all kinds of plants or trees. The first season a row of low growing vegetable such as potatoes or beans may be grown to advantage between each two rows of the bushes. Frequent shallow cultivation should be given, and especially after showers of rain, as this will form an earth mulch which will serve to check evaporation and assist in retaining moisture. About the first of September, or

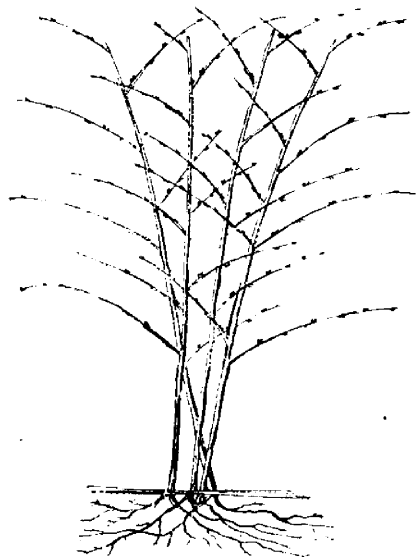


FIG. 1303.—TRIMMED BUSH.

soon after the vegetables have been harvested, the ground should be lightly ridged up to the plants with a one horse plow, leaving a furrow between each two rows of bushes. This protects the roots of the plants during the winter time and allows all surface water to flow rapidly away.

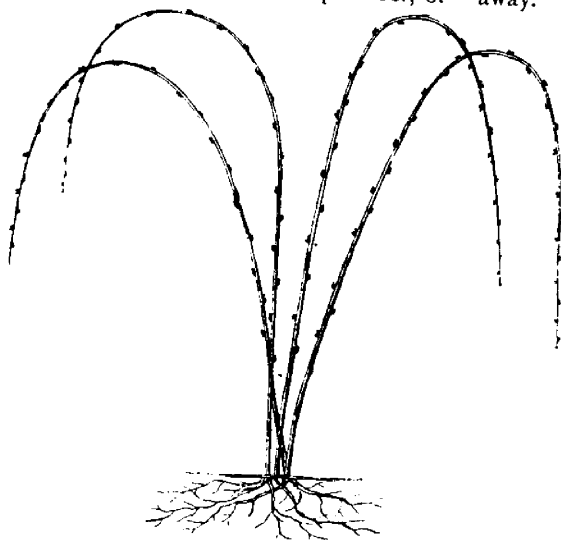


FIG. 1302.—UNTRIMMED BUSH.

I shall describe the method we use in pruning the bushes. In the charts Fig. 1302 represents a bush of the blackcap variety which has been left untrimmed. You will notice that the canes have grown very tall and spreading, and if left in this form they would prove a great drawback to cultivation and gathering the fruit, which would also be much soiled by drooping to the ground when the canes are heavily laden. Tying the canes to stakes is sometimes resorted to, but this is impracticable when a large acre-

## RASPBERRY CULTURE.

age is grown. If the canes were cut back in spring at a height of say four feet, it would leave very little wood for fruit production, as there is but one fruit-bearing stem produced from each bud. Fig. 1303 illustrates our method of pruning. The new canes are cut back at the height of two and one-half feet some time during the month of June. This causes them to become strong and stocky and throw out a lateral branch from each bud on the main canes. These branches sometimes grow to the great length of ten or twelve feet. The following March or April, after severe freezing weather if past, we clip these with a hedge shears to eighteen or twenty inches in length. This leaves an abundance of wood for fruit production and gives the bushes a nice circular form about three and one-half feet in diameter, thus affording every facility for cultivation and gathering the fruit.

As soon as the soil is in a fit condition for working, the ridges should be cultivated back to a level again and shallow cultivation should be continued until just before the fruit begins to ripen. As soon as the fruit has been harvested, the old wood should be cut out, removed and burned. By using a V. shaped steel hook for cutting out the old wood, a horse attached to a wooden rake for gathering it into bunches, and a sled for hauling it away, this work is much simplified. When this has been accomplished, the ridging up should again be done. Doubtless many who are present have attempted to grow raspberries, and have noticed the bushes become sickly after a few years and soon die out altogether. This is usually caused by a fungous disease known as anthracnose. It is contagious, is carried in the air, and is most prevalent during a wet season, Fig. 1304 in the charts illus-



FIG. 1304. reddish spots, sometimes containing a light centre as shown in Fig. 1305.

These spots quickly enlarge and cover the whole surface of the leaves, when they dry and curl up, giving the entire patch the appearance of having had a fire pass over it. When the foliage of a few bushes in a plantation become affected, it rapidly extends itself to others, and in this way will run over several acres in the course of five or six days. In some cases, the bearing canes entirely dry up, while in others, where they still retain sufficient vitality to ripen the fruit, it is much diminished in size and is dry and

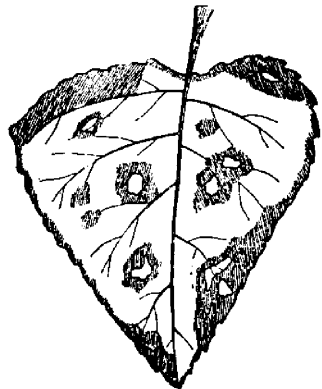


FIG. 1305.

tasteless. The remedy, or rather preventive, for this disease is to spray the canes in spring, before the buds begin to burst with copper sulphate solution, composed of one pound copper sulphate or blue vitrol, and twenty gallons of water. This should be followed by three or four later sprayings at intervals, before the fruit begins to form, with Bordeaux mixture composed of five pounds copper sulphate, four pounds lime, and forty gallons of water. We use a barrel sprayer drawn by a horse, and having two lines of hose attached and two finely distributing nozzles, so that one side each of two rows of bushes can be sprayed as fast as the horse can walk.

As to varieties, after testing quite a number we have discarded all but Hilborn and Gregg in black, Schaffer's Colossal in purple, and Marlboro, and

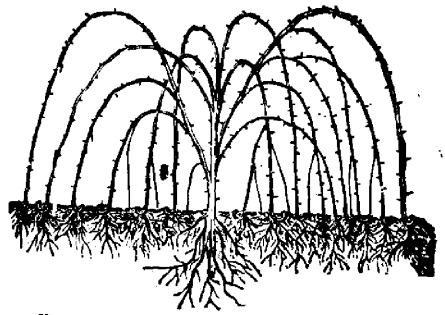


FIG. 1306.—PROPAGATING BY TIPS. Cuthbert in red. All of these I can highly recommend for this locality.

To sum up, success in raspberry culture lies in thorough drainage, judicious fertilizing of the soil, selecting suitable and hardy varieties for planting, frequent shallow cultivation, systematic pruning, and persistent warfare against fungous and insect enemies.—E. F. AUGUSTINE, Aughrim, in Ontario Farmers' Institute Report, 1897.

## SUCCESS WITH SWEET PEAS.

PLANTED the seed as soon as the frost was out of the ground, fully six inches deep, in a soil rich in manure, and near a low hedge, but fully exposed to sunlight. I planted tolerably thick, using two ounces of the best mixed seed for a double row fifty feet long. A single row would have done as well near the hedge. I did not hoe the plants at all, but instead, to keep down the weeds, I mulched them with lawn shavings. The soil wants to be packed about the roots rather than loosened to insure abundant blooming. I did not even train the vines much. They grew so thrifty that they partook of the nature of the sturdy oak rather than of the climbing vine. In fact they grew with

the young hedge which gave them the needed support. I think in a cooler moister climate they ought to be well trained up between woven vines or cords, but here the vines in that condition are apt to burn. I gave them plenty of water, turning the hose on every evening or morning, not for a sprinkle, but a thorough wetting. The heavy stalks daily shot out a profusion of long stemmed blossoms which I as regularly cut. The poorly developed were also snipped to keep off every seed pod. My vines were in bloom for weeks, and some days I cut a large milk-pan full of bouquets for friends and socials.—M. E. A., in Parks Floral Mag.



## CRANBERRY PIPPIN FOR EXPORT.

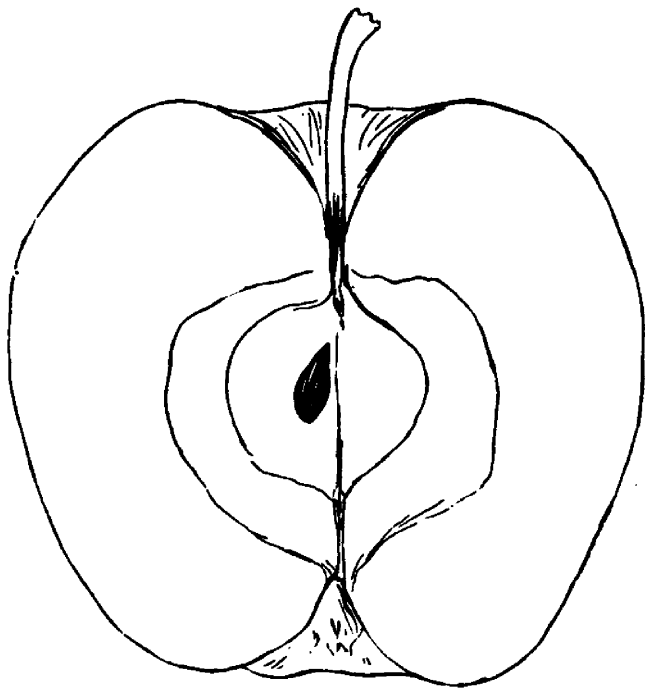


FIG. 1307--CRANBERRY PIPPIN.

WE are of the opinion that it is dangerous ground to recommend too strongly any one variety of apples for export. We may say what we know concerning adaptability of a variety to a certain section, and cite instances of the successful exportation of certain varieties, and leave people to draw their own conclusions. For instance the Newtown Pippin, otherwise known as Albermanle Pippin, sells at a very high price in the English market. But to plant it would be a serious mistake for Canadian fruit growers, because thus far, it has not been found adapted to Ontario. The King apple sells at a very high price but only succeeds in favored sections—indeed no where does it yield freely

enough to make it very profitable. The Baldwin keeps well up, owing to its color. It is always the prominent variety in sale reports, and brings a high price. We noticed a quotation from Hamburg of Baldwins at 21/ per barrel. Possibly this may prove one of our future markets.

We would not plant Pewaukee or Ben Davis in Southern Ontario. A superior apple is the *Cranberry Pippin*, an apple we have grown for many years, and this year exported about two hundred barrels, many of them in apple cases containing about one bushel each. It is finer looking than either the varieties named and better quality. The trees are equally healthy and vigorous, and regular bearer each alternate year.

## THE CANADIAN HORTICULTURIST.

This variety we have shipped to various markets this season, *e. g.* to Liverpool, Edinburgh and Glasgow. When the reports come in we will make them public for the benefit of the members of our Association. The following is an extract from the "Produce World" published in London, Eng., dated 9th November, 1895.

About three years ago a beautiful apple was imported into Liverpool from Canada called the Cranberry. This was a remarkable apple, both in size and sweet, juicy taste. The Baldwin is also a very fine apple, but people were attached to the Cranberry, and it is perhaps remarkable that the latter class of fruit should not have been imported latterly. Newton Pippins are a type of apple shipped over the Atlantic ferry, and some people, in fact, most people, are inclined to the belief that this apple is unsurpassable; but the public taste is one of perhaps eccentric var-

ity, and where one would place faith in the Baldwin, another's penchant for the Pippin was surprisingly funny. However, there appeared to be little doubt as to the Cranberry's excellence, and it is a matter of regret that the shipment ceased so abruptly, at any rate, declined into utter insignificance as far as Liverpool exportation is concerned. Hope is expressed that the next few days will bring forth a bigger shipment, and my informant before-mentioned has graciously acquainted me of the fact that since advising me of the *Campania's* shipment from New York, another steamer with 2,000 barrels from Boston is to hand, making in all 8,000 barrels.

Notwithstanding our favorable experience with this variety, we would not commend it for general planting in Ontario. We know it is adapted to our soil and climate on the South shore of Lake Ontario; indeed it originated on this parallel, on the Hudson River bank, but it might utterly fail in other locations.

## NEW MARKETS FOR OUR FRUITS.

WITH one consent, the fruit growers of Ontario have come to the conclusion that their business is no longer profitable unless some new markets can be opened up for the disposal of their products. With commendable industry the N. D. F. G. Stock Company have been establishing agencies in every town for the better distribution of our fruits in our own province; these towns we have surfeited with all kinds of fruit, and yet we have a surplus and have to accept ruinous prices or else allow it to rot in our orchards.

It is evident that we must go farther and reach some portions of the world where the population is great enough to take our surplus without too much affecting the prices.

Such a country is our own Great Britain, whose vast metropolis, the city of London, alone, contains more inhabitants than the whole of Canada, and

numerous other cities containing each hundreds of thousands of inhabitants. This little sea-girt isle has the accumulated wealth of centuries, an over-flowing population, and land too limited in extent to furnish the food necessary for their subsistence, much less the luxuries. Though the temperature is usually higher than ours, the continued fogs from the gulf stream so obscure the sun that many of the finest fruits cannot be ripened out of doors. Grapes for example are grown under glass, and the finest varieties are very expensive, costing from 25c. to 50c. and even more per pound.

*Peaches* can only be grown against walls exposed toward the sun; they are pruned and trained flat against a stone wall or side of a house, to catch every sunbeam, and thus ripen this delicious fruit. Under such circumstances is it any wonder if peaches bring almost fabulous prices in England, and if there-

## NEW MARKETS FOR OUR FRUITS.

fore we can once land our golden Crawfords and Elbertas in Liverpool markets in prime condition, we shall need no Klondike to furnish us gold.

*Pears* are grown much the same as peaches, being often trained upon the walls to ripen. These fruits are brought over in large quantities from France, and bring excellent prices; but none of them, either peaches or pears, attain the rich gold and scarlet colorings of our Canadian grown samples.

*California* is wide awake to this golden opportunity of money making. First she flooded our eastern cities with her peaches and her pears until Toronto and Montreal are no longer open to our own fruit growers; and this done, she is reaching over ahead of us to Great Britain. Indeed, for two years past, she has been pouring her fruit into Great Britain via New York, at first with great losses, but latterly with enormous profits.

Shall we fruit growers of Ontario allow these chances to slip away from us, and starve for want of a good market, when California growers, three thousand miles farther away, are growing fat by their enterprise.

Regarding other markets for our fruits, I notice the praiseworthy efforts on the part of the N. D. F. G. Stock Co. to introduce our fruits into Manitoba, the North-West. No doubt the country is vast in extent, and one hundred years from now the population will be dense enough to consume a considerable quantity of our fruit. But now the whole population of Manitoba does not exceed that of Toronto, and probably one-half of these are so scattered over the prairies, that our fruits could not reach them. A few car-loads, therefore, at any time will glut the market, and, counting the enormous freight rates, will bring the shipper sadly in debt.

The United States markets are closed

to us, but we notice a sort of retributive justice in operation. During the past few seasons, Canadian fruit has been finding favor in Hamburg, and it looks as if we were about to find an unlimited market in Germany, while late information seems to point toward the exclusion from that country of United States fresh fruit. Some recent shipments of United States apples were found to be infested with San José Scale, and were not allowed by the authorities to land at Hamburg: and not only that, but an edict was passed prohibiting the importation of United States fruit, except upon the most rigid inspection.

These ports are open to Canada, and, no doubt, will be, unless the scale infests our fruit also. What stronger argument can be brought to bear upon the Minister of Agriculture than this, to show the importance of legislation against the importation of American fruit and fruit trees into Canada.

We have just received a letter from a firm in Antwerp, Belgium, which shows that that country too is open for Canadian fruit, for it asks for regular consignments, giving, at the same time, the best of references.

*Australia* is also open for our choice Canadian apples leaving here in October and November so as to arrive before January, when their own summer apples are beginning to come into their markets. In a shipment of apples sent to Sydney three years ago, in bushel cases, I had Cranberry Pippins sold at 15/ per case. All we want is proper cold storage, and that market will be of great value to us.

It is encouraging to note that the Minister of Agriculture for the Dominion has decided to push the experimental fruit shipments to a successful issue, during the present season and thus relieve our fruit growers of the danger now threatening them from over production.

## PROPAGATION AND PRUNING OF CURRANTS.

SIR,—After reading the article with above title in January number, I thought it might interest your readers to have a short sketch of our plan of currant growing. We commence by making our cuttings (either in the fall or early in the spring), cutting them 4 to 6 inches long, these we bury in sand for a few weeks so that they may form a callous. When ready to set, we mark out a furrow deep enough so that we can cover the entire cutting excepting the top bud. We find that cuttings set in this manner will usually throw up one strong thrifty cane, and such a plant we consider the best possible plant for permanent setting in the field. We then set 7 x 7 ft., and instead of pruning to a tree form, we aim to grow a strong thrifty bush that will renew itself from the roots.

Every year we cut out (either in the fall or the following spring) all crooked or weakly young growth, and if any old canes show evidence of disease, they are

taken out also. A weakly side arm is often removed, but main canes are never shortened in. We find that every bush has its own individuality, and it is a harder task to tell just how to trim a currant bush than it is to trim it after you see the bush. We would aim to have from 8 to 10 good strong canes to each bush. If planted closer together than we recommend, it will very likely be best not to exceed 6 or 7. As the bush grows older remove one or two of the oldest canes each year, and leave the same number of the strongest of the new growth. You are thus renewing your bush with young vigorous wood each year. The best of the young growth removed can be used for cuttings for growing new plants.

The currant is one of the easiest fruits to grow, and also one of the most neglected.

L. H. READ.

*Grand Rapids, Wisconsin.*

## PRUNING CURRANTS.

IN dealing with currants the red and white need similar treatments as regards pruning, but this treatment is in no wise similar to that suitable for the gooseberry. Suppose the bush is in fruiting form, that is, in good cropping condition, the best portion of the young shoots need annual removal, with this exception, that where they are needed to fill up spaces then they should be shortened to, say, 5 in. or 6 in., and close to a bud. In removing all useless lateral shoots up the stem see that a short spur is left, as the fruit is produced from these spurs the following year. This, with the removal of all old

wood and thinning out the spurs when they are crowded, is about all that can be said on this subject. These bushes should also be set as advised for gooseberries, and in the autumn the young shoots are usually cut back to two inches. In pruning the black currant, the plan adopted is almost the same as with gooseberries, but the former does not need such free and vigorous cutting, the growth being much less in comparison. It is important that all dead wood be taken out each year, and the shoots and branches be thinned to let in the light. It will do good also to have all unproductive branches or wood

## EFFECT OF SPRAYING BORDEAUX MIXTURE ON FOLIAGE.

taken out and to work in plenty of well-rotted manure or superphosphate, with a good handful of salt for each bush. The currant, like the raspberry, is willing to keep shady, but only because it is modest. It is one of the fruits that thrive better among trees than in too dry and sunny exposures. There-

fore, in economising space of the home acre, it may be grown among smaller trees, or, better still, on the northern or eastern side of a wall or hedge. In giving this and kindred fruits partial shades the bush should not be compelled to contend to any extent with the roots of trees.—Bush Fruit Culture.

## THE EFFECT OF SPRAYING BORDEAUX MIXTURE ON FOLIAGE.

IN bulletin 86 of the Cornell Experiment Station, Mr. E. G. Lodemann makes the statement that the large number of applications of Bordeaux mixture applied at that institution during the year 1894, seemed to have an influence upon the thickness of the foliage.

On October the 15th, he says, "leaves were taken from sprayed and unsprayed trees of three varieties of plum—Felleberg, Bradshaw and German prune,—five leaves from each lot, and in all cases from corresponding portions of the trees. In making the sections the material was uniformly cut from near the midst, in the vicinity of the centre of the leaf, so that no error might creep in under this head.

The average measurements were as follows:

|   |   |
|---|---|
| <i>Felleberg.</i>                       |   |
| Sprayed—10.6 micromillimetres           | } a gain of 1.9 per cent.<br>from spraying. |
| Unsprayed—10.4 "                        |   |
| <i>Bradshaw.</i>                        |   |
| Sprayed—10.9 micromillimetres           | } a gain 2.8 per cent.<br>from spraying.    |
| Unsprayed—10.6 "                        |   |
| <i>German prune.</i>                    |   |
| Sprayed—12.9 micromillimetres           | } a gain of 10.2 per cent<br>from spraying. |
| Unsprayed—11.7 "                        |   |
| A micromillimetre = .000039 of an inch. |   |

The difference between the sprayed and unsprayed foliage although slight in the first two cases, was nevertheless in favor of the sprayed foliage. This is plainly shown in the case of the German prune. The particular cells of the plum

leaves which were enlarged could not be determined with certainty, but the palisade cells appeared longer in the sprayed leaves."

These statements aroused my curiosity and I suggested the matter to Mr. J. C. Macdonald, one of our third year students, as a line of investigation which he might pursue with interest and profit to himself and others. He commenced the work in January last and the results of the investigation may be briefly stated as follows:

It is a well-known fact among those who have sprayed with the Bordeaux mixture, that if the quantity of lime is not sufficient to neutralize the acid properties of the copper sulphate, the leaves to which it is applied will be scorched or burned by the acid; hence one of the objects of the experiment has been to determine the comparative effect of mixtures containing different quantities of lime.

Twelve seedlings, having an average height of about 20 inches were used for the experiment. They were potted and placed in the green houses in the first week of January, and forced into leaf. On February the 10th, the first leaves had attained about half their normal size and the first spraying was done.

The seedlings were paired as closely as possible, according to size and species;

## THE CANADIAN HORTICULTURIST.

one of each pair was sprayed, and the other left unsprayed as a check plant. The six pair were then divided into three lots of two pairs each for treatment with Bordeaux mixture of different compositions.

| Unsprayed<br>Nos. | Sprayed<br>Nos. |                   |  |
|-------------------|-----------------|-------------------|--|
| 1                 | 2 (pear)        | } Sprayed<br>with | { 4½ lbs. cop. sulph.<br>2 lbs. lime,<br>40 gals. of water |
| 3                 | 4 (pear)        |                   |  |
| 5                 | 6 (peach)       | } Sprayed<br>with | { 4½ lbs. cop. sulph.<br>4 lbs. lime,<br>40 gals. water.   |
| 7                 | 8 (qu'ce)       |                   |  |
| 9                 | 10 (pear)       | } Sprayed<br>with | { 4½ lbs. cop. sulph.<br>—lbs. lime,<br>40 gals. of water. |
| 11                | 12 (pear)       |                   |  |

A small atomizer, such as is used for throat troubles, was used, in order to ensure an even wetting of the surfaces of the leaves. Four successive applications were made on February 10th, 16th, 23rd, and March the 1st respectively.

On March the 10th, specimens of leaves corresponding in size, age, and position on the stem, were taken and put through the process of imbedding in paraffin, in order that sections of exactly the same thickness might be made of them. The plants were afterwards sprayed on March 16th, 24th, and April 5th; leaves were again selected in the same manner and imbedded by the same methods.

Transverse sections across the central part of the leaf were cut with a microtome; so that the sections were of the same thickness. No noticeable changes were observed in the foliage of the plants, until the time of the fifth application, when two and four which had been treated with the mixture containing the small amount of lime, appeared somewhat crumpled, but did not turn black. A critical examination and comparison of all the plants after the last spraying, revealed a marked difference between the color of the sprayed and the unsprayed plants. Those treated with an excess of lime mixture were decidedly greener than the unsprayed ones, while

those treated with the neutralized or second mixture also showed a deeper green, though not so marked as in the previous case. A microscopic examination of the leaves of Nos. two and four, which were treated with the unneutralized solution, failed to distinguish any gain in the amount of chlorophyll in the cells. So this experiment seemed to prove that the increased greenness of the foliage was in direct ratio to the quantity of lime used; and an examination of the sections of the leaves bore out the observations made on the external appearance. The most noticeable feature was the increase in the number of chlorophyll granules, both in the palisade cells and in the spongy parenchyma of the sprayed leaves. Thus the increase was in proportion to the amount of lime used.

The chlorophyll of the sprayed leaves was also a brighter green than that of the unsprayed.

In many places the treated leaves showed a third layer of palisade cells more or less continuous; in the untreated leaves, nothing more than a few scattered palisade cells were seen in addition to the usual double layer.

Measurements of the thickness of the leaves were made by means of the micrometer, from six to twelve of each leaf having been taken. The results in averages were as follows:

|                        |              |  |
|------------------------|--------------|--|
| No. 1 (plum) unspr'd   | 141 mic'tres | } difference = 4.2 mms<br>} loss fr spr'ing = 2.3% |
| No. 4 (plum) spr'd     | 136.8        |  |
| No. 3 (pear) unspr'd   | 177.6        | } difference = 4.2 mms<br>} g'n fr spr'ing = 2.5%  |
| No. 4 (pear) sprayed   | 181.8        |  |
| No. 5 (peach) unspr'd  | 123          | } difference = 9 mms<br>} g'n fr spr'ing = 7.3%    |
| No. 6 (peach) spr'd    | 132          |  |
| No. 7 (quince) unspr'd | 169.8        | } difference = 1.1 mms<br>} g'n fr spr'ing = 16%   |
| No. 8 (quince) spr'd   | 168.1        |  |
| No. 9 (pear) unspr'd   | 162.1        | } difference = 12.1 mms<br>} g'n fr spr'ing = 7.5% |
| No. 10 (pear) sprayed  | 174.2        |  |
| No. 11 (pear) unspr'd  | 163.2        | } difference = 18 mms<br>} g'n fr spr'ing = 10.7%  |
| No. 12 (pear) sprayed  | 136.2        |  |

It might be explained that in the case of the quince, No. 7 was a much more vigorous plant than No. 8.

While the wide variations shown are

## EFFECT OF SPRAYING BORDEAUX MIXTURE ON FOLIAGE.

somewhat unsatisfactory; yet there is sufficient data to indicate a gain from spraying and an additional increase of thickness where an excess of lime was used.

These experiments conducted in the greenhouses, where most of the conditions were under control, give perhaps more valuable results than if they had been carried on in the open air, as rain and other atmospheric disturbances which would affect the plants, were entirely avoided. A steady temperature, a regular supply of water, without washing the leaves an even spraying of the leaves with an atomizer, all went to secure uniformity of surrounding influences. On the other hand, the dews, which are deposited on outdoor plants, might have the effect of bringing into solution some of the compounds of the dried residue of the mixture adhering to the leaves.

The results, on the whole, confirm Lodemann's statements, that the increased thickness of the leaf resulted from spraying with Bordeaux mixture, and that the thickness was probably due to an increase in the length of the palisade cells.

Lodemann's measurements, however, are manifestly wrong, as the plum leaves examined by him are stated to be "from 10.4 to 12.9 micromillimetres in width," or about the same width as length of a good-sized microbe. Leaves would be very flimsy structures if this were the case.

With regard to the increased greenness of the foliage, it is well-known that calcium is especially abundant in the leaves of green plants, and it is probable that some of the calcium of the lime in the Bordeaux mixture is absorbed by

the leaves. Boussingault found that if calcium sulphate be placed on the leaves of a plant it will disappear in a few hours, and sooner on the lower than on the upper surface. Further, the effect of depriving plants of calcium as an ingredient of their food supply is well shown in the text books on Physiological Botany. Hence it is not improbable that the increased greenness in the leaves sprayed with an excess of lime, is caused by the leaves absorbing an excess of calcium.

### CONCLUSIONS.

Bordeaux mixture has an invigorating effect on leaves, as evidenced by the increased thickness and the marked development of the chlorophyll granules in the cells. This increased vigor is of much importance, as a strong healthy plant is always in a much better condition to withstand the attacks of fungus diseases than a weakly one.

Instances of losses from improperly made Bordeaux mixture indicate that a lack of sufficient lime may result in injury. Crumpling of the leaf resulted in Nos. two and four from lack of sufficient lime.

An excess of lime gave better results than smaller amounts. The leaves seem able to take up some of the lime; and additional lime give the foliage increased vigor. Hence, it might be advisable to use larger amounts of lime than are generally used in the mixture. The increased thickness of the leaf is probably due to the increased development of the palisade layers of cells.

F. C. HARRISON,

*Bacteriologist.*

*O.A.C. Guelph.*

## NUT GROWING FOR PROFIT.

**A**T a recent meeting of the Massachusetts Horticultural Society, a paper was read by F. M. Bartram, on this subject.

We give an extract, treating of the chestnut :—“From a commercial standpoint the chestnut, for this vicinity, seems to me by far the most promising of nuts. We know the tree thrives and bears here, which are important factors already established. The market takes all the American chestnuts, and many thousand pounds besides which are imported from Italy and France. They are mostly sold along the streets, much as peanuts are. Consider the vast increase possible in this line, and the far greater demand when they become as frequently used for desserts and relishes as their merits deserve. Mark the frequency with which the chestnut appears in newer cookbooks for stuffings, dressings, etc., and remember that chestnuts are even now found with vegetables upon that class of American tables that soon have innumerable imitators ; and prepare for this demand, which is small, indeed, compared with the possible and probable consumption when chestnuts are dried, ground into flour, and become the staple article of diet that they have so long been in southern Europe. Not only chemistry, but the experience of generations, has demonstrated the fitness of chestnut meal for human food.

Chestnut trees do best on high, well-drained land with open sub-soil ; such hillsides as abound in New England. Stoney land is no objection ; chestnuts do not bruise in falling as plums would. Once established, a chestnut orchard continues in profit for decades or even centuries. No protection and very little pruning are required. No large fertilizer

bills encroach upon profits ; their roots go deep into the ground and get fertility far below the reach of annual crops. An established chestnut orchard will yield as many bushels per acre as corn, and with little more than the expense of gathering. Chestnuts brought \$14 per bushel at the first of last season for the best sorts. These fell as the season advanced to \$12 and \$10, and to \$7 and \$8 for poorer sorts. If farmers should get such prices for corn they would raise nothing else, one would think.

Chestnuts do not require constant attention and the gathering can be done by cheap labor. They are not perishable and can be stored or sent great distances to get a good market price. Chestnuts do not need expensive packing boxes for shipping.

There are three distinct strains of chestnuts, the American, European and Japan. The American nuts are small, usually fuzzy, and of the best quality. The European trees have given us a strain of very popular chestnuts, including Paragon, Ridgely, Scott and a host of other good kinds. In Japan there are three kinds ; the largest and best is being planted here ; the choicest seedlings are named and are propagated by grafting. The trees bear when very young and are good croppers of nuts of the largest size, although not unusually of the finest flavor.

Many are deterred from embarking in nut culture because they think they have to wait long for returns, but the fact is you do not have long to wait.

In conclusion, let me call attention again to the timber value of nut-bearing trees. I am still more anxious that their ornamental properties be remembered, and especially by the owner of a home



## THE CAULIFLOWER.

with but limited surroundings. Let him who feels that much of his earnings must be sacrificed upon the altar of utility not forget that there are trees as handsome as any, that will yield each year a product desirable at home or salable anywhere.

Let me recommend nut culture to the

farmer who would increase his income. No one need be deterred because he has large acreage to devote to nut orchards alone. There is surely room for that tree which, while crowding out nothing useful, will be an enduring source of satisfaction.

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## THE CAULIFLOWER.

*To the Editor of the Horticulturist:*

SIR,—Cauliflower is plentiful in this market direct from California. Prime heads five inches in diameter retail for 25 cents, and smaller ones for 18 to 20 cents. They are sent here in carloads. They must pay winter freight charges in addition to cost of fire protection from frost. If such products can be sent from Lower California, 3,500 miles by rail in midwinter and retailed in New York and Boston and intermediate towns and cities at a profit, it would seem that distance is no longer to be considered in seeking a market for green fruit and vegetables.

In my garden at Oshawa I raised large late *Le Normand* cauliflower 12 inches and more in diameter, firm, white and perfect. Such heads would have sold in this market last November at 40 to 50 cents each.

The climate of Ontario is better suited for the successful production of cauliflower than that of California. Freight charges from Ontario with duty added should not be greater than freight

charges alone from the Pacific Coast. During January I have been enjoying Easter Beurre, Glout Marceau and Patrick Barry pears, also from California. For very large, fine and perfect specimens I have paid 10 cents each, medium size but perfect fruits, 5 to 8 cents each. One Easter Beurre measured 12 inches in circumference. It was perfect but the quality not as good as some of the smaller fruits. These pears came packed in small cases, four layer of fruit in each case. A retailer can dispose of a case without loss from decay and is quite willing to pay the extra cost of small cases.

When prime Naval oranges from California are retailing at 4 cents each the masses will not buy pears at 10 cents each. In this market quality and condition determines the price. Fruits and vegetables of prime quality and in prime condition always command ready sale at liberal prices. For such goods the market is never overstocked.

FRANCIS WAYLAND GLEN.

*Brooklyn.*



CONSTRUCTION OF A FARM ICE-HOUSE.

TWO classes of farm ice-houses are practicable. If high dry ground or a hill-side is available, a pit or submerged house can be constructed. Make a hole in the ground of the desired size, the bottom highest in the middle, so that the water from melting will drain toward the walls. At each side place a line of tile leading from the house to the side of the hill, or to another drain or ditch. Drainage must be perfect, or results will not be satisfactory. For walls, put in a frame made much like that of an ordinary corncrib, with the boards close together and on the inside of the uprights. The joists should be 2 x 6 pine or hardwood, depending upon which is the cheapest. Stone may also be used. The roof is best if 2 x 6 studding is used, boarded on both sides; but any kind of a roof will serve, especially if covered with hay, straw, or stalks to keep out the heat. If the pit is in a

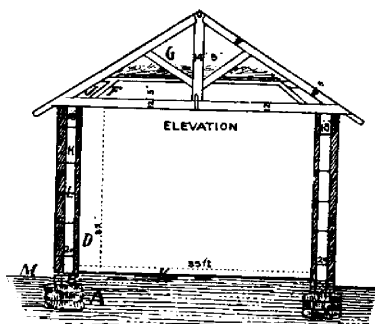
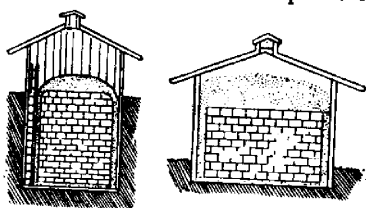


FIG. 1309.—ICE-HOUSE.

possibility of its rising in the pit, the safest way is to build the house entirely above ground, taking the precautions outlined above as to location, drainage and ventilation. A floor is not absolutely necessary, although desirable. A cheap shed with rough posts, carefully double boarded and the air space filled with sawdust or chaff, will be better than nothing, and if a straw stack or heap of cornstalks could be built over it, such an affair would keep ice fairly well. But thrifty farmers believe in building a durable ice-house that will last. The common type is shown in Fig. 1308 b. A 6-in. dead-air space is not



a FIG. 1308.— b

shady place—which is always desirable—the gables may be left open for ventilation. If sun strikes the roof, ordinary ventilators must be provided. Drainage must be perfect and the ventilation adequate, but it is best to have as little circulation of air as possible. A door must be made for taking out ice, and as the supply is lowered a ladder becomes necessary. Fig. 1308 a shows such a pit. If water stands near the surface of the ground, admitting of a

A DURABLE ICE-HOUSE

sufficient, even if the outer boards are matched and the inner square edged, with tarred paper underneath both. Some think the paper is hardly necessary under the inside boards if they are matched, but square-edged boards may be used on both sides with paper on both sides of studding. Fig. 1309

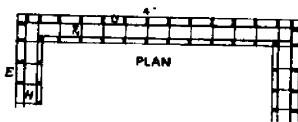


FIG. 1310.—PLAN.

## WOOD ASHES.

shows the plans of one of the largest and most experienced firms in the ice trade, which is claimed to embody all of the essential particulars necessary for a perfect ice-house, unless it be deemed desirable to put in a ventilator to carry off the heated air radiating from the roof in midday. In the elevation plan, A is a dry wall, B mortar wall, C outer posts, D inner posts, E sills laid in lime mortar, F partition under roof, G floor

with hay covering, H spaces for filling between walls, J spaces for filling under roof, K double flooring laid crossways, L ties of hoop or band iron, M natural surface of ground. In the ground plan, doorways are made from top to bottom at any convenient place (the gable ends are best), boarded and filled as the rest of the house after the ice is put in.—Farm and Home.

## WOOD ASHES.

**T**HERE is a growing interest in the subject of wood ashes, and their use as a fertilizer. This is largely owing to the fact that long cultivated lands are beginning to show a lack of the fertilizing constituents that are supplied by ashes, and a desire on the part of the tiller of the soil to increase and improve his yields. Large quantities of this valuable fertilizer are annually exported from the Province; and what makes it worse is that they are gathered chiefly from the farms which need them so badly. To supply the growing demand for information, and to gain a more definite knowledge of the fertilizing constituents of wood ashes, we have, during the last year, analyzed the ash of most of the Ontario forest trees, fruit trees and small fruits.\*

The growing plant gathers all its mineral constituents from the soil in which it grows, and these, not being combustible, are left as ash when the plant is burned; consequently, the ash must contain all the mineral constituents that are essential to growth. These are potash, phosphoric acid, lime, mag-

nesia, iron and sulphur. These substances form a very small part of a plant, yet without them no plant could grow and produce seed; in fact they are indispensable to life. Of the six essential plant-food substances named, potash and phosphoric acid are the most important, not only because they are taken up by the plant in large quantities, but also from the fact that our average Ontario farms do not contain them any too abundantly. Wood ashes, therefore, are usually valued according to the amount of those two constituents which they contain. Although potash and phosphoric acid are the most valuable plant food substances in ashes, ashes also contain large quantities of lime, which is of considerable value to the growing plant. Lime is usually present in the soil in sufficient quantities to supply the wants of growth, yet its application may produce marked results. By acting chemically on certain constituents in the soil, plant food, especially potash, is brought into an available form. It neutralizes the free acid of the soil, and thus helps along the process by which vegetable matter is changed to a form in which the plant may make use of its nitrogen. It also tends to im-

\*For full reports of this work, see the Report of the Professor of Chemistry, in the Ontario Agricultural College Report for 1896. Some additions will be made in the report for 1897.

prove the mechanical condition of both clayey and sandy soils.

The amount of these fertilizing constituents contained in an ash will vary according to the source from which it is derived. The ash from young branches will be richer in potash than that from the older parts of the tree. Different soils will supply varying quantities of potash, phosphoric and lime. The following table gives the composition of a few of the more common ashes that we have analyzed. The ashes were obtained by carefully reducing the several woods to a comparatively white ash. Each sample, therefore, is true to name. The figures given express the percentages of the various constituents contained in the dry ash :

| Name of Ash.    | Potash.  | Phosphoric Acid. | Lime.       | Magnesia. | Iron. | Sulphuric Acid. |
|-----------------|----------|------------------|-------------|-----------|-------|-----------------|
| Hard Maple..... | 9.31     | 2.03             | 45.24       | .....     | ..... | 1.14            |
| Beech.....      | 7.58     | 1.39             | 41.21       | 6.16      | .30   | Traces.         |
| Cedar.....      | 3.30     | .98              | 49.06       | 2.49      | .70   | .77             |
| Swamp Elm.....  | 35.37    | .45              | 23.64       | 6.48      | .19   | Traces.         |
| Black Ash.....  | 25.30    | 1.20             | 49.04       | 7.42      | .22   | .71             |
| Hard Coal.....  | Traces.. | 16               | Traces..... | .....     | 5.32  | .41             |

The figures show clearly why ash buyers are so anxious to get black ash or swamp elm ashes, but at the same time it must not be forgotten that these

ashes are very light and bulky ; consequently there may be more potash in one measured bushel of hard maple ash than in the same bulk of swamp elm ash. The hard woods contain a larger quantity of phosphoric acid than the soft woods. Cedar, as would be expected, is poor in both potash and phosphoric acid. The price of potash and phosphoric acid, in the form of artificial fertilizer, during the last year, has been 4 and 4½ cents per pound respectively. Figuring the value of the above ashes on this basis, we have the following as their value per ton :

|                 | Potash. | Phosphoric Acid. | Total.  |
|-----------------|---------|------------------|---------|
| Hard Maple..... | \$ 7.44 | \$ 2.71          | \$10.12 |
| Beech.....      | 6.06    | 1.25             | 7.35    |
| Cedar.....      | 2.64    | .88              | 3.51    |
| Swamp Elm.....  | 28.29   | 40               | 28.69   |
| Black Ash.....  | 20.24   | 1.08             | 21.32   |

In many parts of the Province ashes can be bought from the producer at from 3 to 5 cents per bushel, or at a rate of \$1.25 to \$2.10 per ton. These ashes, in many cases, will contain 10 to 15 per cent. of moisture, but after allowing for this, we see how far the price received is from their real value. By reference to the table of analysis in the College Report, and knowing from what woods the ashes on hand were obtained, one may calculate—at least approximately—their value. But the best way to know their value is by noting the increased yield when they are applied to crops requiring potash.

The caring for and application of ashes must receive special attention. If not properly housed while accumulating, much of the soluble plant food will be lost by leaching. If not applied to

## HELPS IN THE GARDEN.

those crops which are in special need of potash, no noticeable results may be obtained. Further, if mixed with farm-yard manure, they may do more harm than good; because they tend to liberate, as ammonia, the nitrogen of the manure. The crops which are most

benefitted by wood ashes are the legumes (clover, peas, beans, etc.) corn and potatoes. If we may judge by the amount used by fruit growers, they are fully aware of the value of wood ashes in the orchard.—R. A. HARCOURT, Asst. Chemist O.A.C., Guelph.

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## HELPS IN THE GARDEN.

**M**R. E. S. GOFF, of the N. Y. Agricultural Experiment Station, read a paper upon "The Farmer's Garden," before a farmers' institute at Lockport, N. Y., in which he said: "In order to grow radishes free from maggots in the roots, I would grow them in a bed of sand, and to prevent the flea-beetles from destroying the foliage, I would place this bed, if possible, upon a bit of sod ground, and surround it with a tight frame of boards at least a foot high. For the green cabbage worm, I have found pyrethrum or Persian insect powder the most satisfactory destroyer. If the powder is of good quality it will bear diluting with twice its bulk of air slaked lime or flour, and if the mixture is allowed to stand a few hours before being applied, it will prove more effectual than if put on immediately after mixing. The Woodason bellows is an

excellent tool for distributing the powder. The best time to apply it is on a quiet evening, when the dew has just commenced to fall.

"For the striped cucumber beetle, prevention is the only method that I have found satisfactory. Cover the hills before the plants come up, with frames made of narrow boards with mosquito netting tacked over the top.

For the squash vine borer, I find cobs dipped in coal tar and placed among the plants a great benefit, but not a perfect remedy. The cobs should be placed in the hills about the middle of June, and they should be dipped in the tar again once a month or so, during the season.

For the currant worm, I have found nothing better than the old remedy, viz.: powdered white hellebore applied either dry, or with water.

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## BEGONIAS.

Flowering varieties like a night temperature of 60 degrees, sun and moisture. Rex varieties, same temperature at night, no sun, but strong north or east light; do not spray surface of foliage, or allow water to drip on it; keep just moist; add to compost a little sharp

sand to make open soil. Tuberous varieties like sun, or will do with partial sun, about the same temperature, and are cared for in starting, drying off, and in dormant state the same as Achemines. Make good bedders in summer garden.

## \* Doings of Other Societies. \*

### QUEBEC FRUIT GROWERS.

ANNUAL WINTER MEETING OF THE SOCIETY AT LACHUTE.

THE fifth annual winter meeting of the Pomological and Fruit Growing Society of the province of Quebec was held in Lachute, recently. Mr. R. Brodie, president of the Society, occupied the chair, and there was a large attendance of those interested in the development of horticulture in the province.

The president, in his annual address, said that the past year was one of almost famine in fruit production, following a year of plenty. The plum crop in Kamouraska and L'Islet had been a failure, and in the Montreal district a great many apple trees were killed outright. He urged that the Quebec Government should follow the example of the Ontario Government, and employ experts to instruct the farmers how to spray and care for their trees in general. He praised the energy of Mr. Fisher, Minister of Agriculture, in making the shipping of fruit in cold storage a success. Now Quebec fruit growers could place choice autumn and early winter apples in good condition on the English market, which was not possible without cold storage.

Mr. Auguste Dupuis, the well-known horticulturist, of L'Islet, read an instructive paper on the effects of the winter of 1896 and 1897 on the orchards of the eastern portion of the province of Quebec. He made the regrettable statement that in this district one-third of the apple trees and three-fourths of the plum trees had been killed last winter. Some of the latter were brought from France by the earliest settlers of the province

of Quebec and had perpetuated themselves since but were now almost eradicated. Mr. Dechene, provincial secretary of agriculture, had promised to give three thousand plum trees to the fruit growers in the district, and the Dominion Minister of Agriculture had promised to assist. Mr. Dupuis thought it possible that they might be able to secure from France some of the old varieties of plums, which had proven so profitable below Quebec.

Mr. Percy H. Selwyn, Ottawa, and Mr. Gilbert Wintle, two experts in agriculture, read interesting papers on bees and bee-keeping. During the discussion which these papers called forth, a motion was passed in favor of legislation similar to that now existing in Ontario to protect bee men from the danger involved in spraying fruit trees during bloom—a practice which is destructive to bee life, and injurious to the fruit trees themselves.

An interesting address was given by Dr. Fletcher, botanist and entomologist of the Experimental Farms, on insects injurious to fruits in 1897. The speaker dwelt on the importance of proper spraying as the only means of preventing the depredations of insects on fruits and fruit trees. He agreed with the resolution of the society that trees should not be sprayed in bloom as it injured the honey bees. He dilated on the advantages of cold storage for fruit, and predicted great profit from it to fruit growers and farmers.

Dr. Fletcher produced a specimen of San Jose scale and reminded the meet-

## DOINGS OF OTHER SOCIETIES.

ing that a few years ago it was thought by scientists that it would not live east of the Rockies, but now it had established itself in New Jersey and other states, and was committing untold depredations. It was now occurring injuriously in all the fruit growing states with the exception in the east of New Hampshire, Vermont, Maine, and Rhode Island. Hundreds of thousands of trees had been destroyed within the past few years. He regretted to announce that the San Jose scale had appeared in a few places in the peach belt of Ontario and in British Columbia. The Ontario Government had legislated that all trees affected with it should be destroyed, and one-third their value paid by the Government.

"There is at the present time," said Dr. Fletcher, "urgent demand being made on the Dominion Minister of Agriculture to legislate for the total prohibition of all nursery stock being imported from the States into Canada. I have not seen my way to recommend this, so serious is it to interfere with established channels of trade. The Minister of Agriculture wishes an expression of opinion from this society with regard to the advisability of passing the law demanded. I shall not say that the San Jose scale will not enter the Province of Quebec. I did not think it would get into Ontario, but it has. I warn you to take all precautions against it. I advise you to get your nursery stock in Canada, for the Northern States are infested with the most dangerous pest ever known. It is not worth your while to take the risk by buying stock in the United States when you can get it equally good or better in Canada. I cannot tell you whether the Canadian Government will pass legislation on the matter, but you can commence by protecting yourselves. We have tried not

to create unnecessary alarm, but matters have become so serious that Canadians must be warned against it."

Mr. Brodie pointed out that the orchards near Montreal were in great danger because of the importation of California fruit.

Dr. Fletcher said it would cause great trouble if the importation of fruit were prohibited, but at all events although the scale was on the fruit, so far it was believed that it could not spread from it. All the countries from which we took fruit made it a misdemeanor to export fruit infected with the San Jose scale.

To Mr. Newman Dr. Fletcher stated that the scale had not yet got into Quebec. It affected every kind of tree except conifers, and in New Jersey it was believed that it had spread even to the forest trees. This would be deplorable in Canada.

Rev. Mr. Hamilton advocated stringent laws keeping out all United States plants and trees. Canadians did not need one of them. The United States were fond of putting up Chinese walls against Canada and we should retaliate for our own protection.

Prof. Fletcher pointed out that eighty per cent. of our trees were imported from the United States.

Mr. Fisk said that the birds carried the scale from the United States to Canada, and we could not legislate to keep them out.

Prof. Fletcher said every American plant imported was now reported from the Custom House to the Minister of Agriculture and traced to its destination and the consignee warned to be on his guard.

Mr. Crandall, the Canadian Government trade agent in England, spoke on the value of the British market for our fruit exports. He said that the Provincial Governments and the Dominion

## THE CANADIAN HORTICULTURIST.

Government of Canada had done more than any governments in the world in the matter of paternalism in connection with agricultural product and their sale. He held that it was useless to look to the United States market, and that Great Britain was our only hope. It was an inexhaustible market for surplus products of both the United States and Canada, and having recently returned from England, he was able to say that there was a great desire to encourage trade with Canada, and a very strong and growing feeling in favor of giving preferential trade to the colonies. He saw Canadian products of all kinds landed in England last autumn in such bad condition that he was ashamed to be recognized as a Canadian. Apples had been shipped with fruit of first class quality at each end of the barrel and perhaps a bushel of culls in the centre. If such a thing became common the English people would not be fooled, and Canada's trade would be ruined. He urged Canadian apple growers to be careful in future in catering to the taste of the English consumers. For small consignments of specially selected fruit he would advocate shipping in cases of about fifty pounds, but for large shipments he did not know that they had yet discovered any improvement on the barrel.

Mr. Brodie asked in what manner should tomatoes be sent to England. This was a matter of great importance to producers on the island of Montreal.

Mr. Crandall said that it did not matter much if the tomatoes arrived in good condition. The Grimsby people first shipped very large tomatoes last year, but it was a failure as the English people wanted a small round tomato with a fine skin.

Mr. Shepherd said that for fifteen years he had been shipping to England the choicest table apples in cases, but got

no profitable result until he made trade connections with special firms who sold them. He believed there was no use shipping to ordinary produce dealers in cases. They allowed nothing for the special care and extra expense in putting them by. In fact, in 1895 he lost five shillings a case on some.

Mr. Crandall said that next year they would endeavor to make further improvements on steamers in the matter of getting rid of the hot air in the hold of a vessel carrying apples. This would improve their conditions.

Mr. J. M. Fisk, of Abbotsford, read an instructive paper on "Pruning."

Mr. R. W. Shepherd, speaking on the failure of the apple crop of 1897, said :

No doubt, to a great extent, at least, the phenomenally heavy crop of 1896 was the cause of the small crop of 1897. But we must look further for the cause of the bad quality of this small crop. Excepting, perhaps, a few early varieties, the whole crop of this province was undersized and ill looking. Never in my experience have I seen such a miserable crop of Fameuse, as that of the past season. No district seems to have been more favored than another, and the proportion of number one fruit in the crop was not, I believe, more than five per cent., and in some cases even less than that. As a general rule, we orchardists of the Province of Quebec have the great advantage of snow protection to the roots of our trees ; but the winter of 1896 97 was an exception to that rule, and, consequently, the roots of the trees were exposed to the very severe and continuous frosts of last January and February, which penetrated four and five feet below the surface of the ground. Those orchards in sod, although the trees were much shocked and injured, were able to survive and feebly develop their fruit. The small size of the fruit,



## DOINGS OF OTHER SOCIETIES.

therefore, must, I think, be attributed to the injury the roots of trees were subjected to during last winter, and the tremendous growth of fungus was, no doubt prompted by the weak condition of the trees, in consequence of the injury done to the trees by frost. The freezing of the roots were even more pronounced and noticeable in trees which were standing in ploughed or cultivated land, these trees being with few exceptions, badly injured, or in fact, killed outright, unless they had been protected by heavy mulching. These root-killed trees retained, generally, enough vitality in their trunk and branches to enable them to leaf out and perhaps endure for a month or two, but all, or nearly all, succumbed before the summer had expired.

One remarkable instance of the effect of frost on the roots of trees was particularly noticeable in one of the orchards of Mr. Robert Brodie, our president. This orchard, on a hill at Coteau St. Pierre, Montreal, contained, perhaps, 250 bearing trees, probably 25 years planted, all magnificent trees—one half in sod the other half in plowed land—those in grass (which had been cut once during the season and the after growth allowed to lie down) thus affording a good winter protection to the roots. When I visited the orchard last October, the trees in plowed land were almost all dead or so weakened that I believe that they were beyond redemption. Whereas those in sod were, seemingly, in very fair condition, and bearing a good crop of apples. It seems to me that the experience of last winter teaches us a severe lesson on orchard cultivation. We cannot afford to loose our well established bearing trees in that wholesale way.

We must either keep our bearing trees in sod or, if we cultivate the ground be-

tween the trees, we shall have to mulch the ground very heavily under the branches of the trees as far as the roots of the trees extend. If sheep have been grazing in the orchard it will not do to trust only to the sod protection in such a case, but I would recommend a mulching, also, on top of the sod. But Mr. Brodie's plan, to allow the aftergrowth of grass to become matted and lie down, is a most excellent system and affords the best possible protection. With last years' experience before us we cannot trust to the old-fashioned snow mulch as our only protector, but better be on the safe side and give more attention to winter protection of the roots of our orchard trees and thus discount any chance of root killing.

Mr. Dupuis, the new president, who is also vice-president of the Council of Agriculture of the Province of Quebec, announced that he had received a letter from Hon Mr. Dechene, Provincial Secretary of Agriculture, saying that the Government had decided to establish experimental fruit stations throughout the province. An Order-in-Council would be passed to carry out this policy. This announcement was received with gratification, as the scheme had been urged upon the Government by the Society.

A feature of the convention was an exhibit of splendid specimens of different varieties of apples by members of the Society. Among the exhibitors were R. W. Shepherd, J. T. Gibb, Como; C. P. Newman, Lachine; R. Hamilton, Grenville; Malcolm Smith and Norman Jack, of Chateauguay; Capt. Halcro, Hudson. Mr. Newman exhibited Duchess apples, a summer apple maturing in August, which had been kept in cold storage, were now in perfect condition, and were selling at fancy prices.

## NOVA SCOTIA FRUIT GROWERS.

THE Thirty-fourth annual meeting of the Nova Scotia Fruit Growers' Association was held in Wolfville, on January 26th, 27th and 28th. The attendance was good throughout the meeting, and the papers and discussions were of unusual interest. Of course the San José scale was the subject of paramount interest to all, and President Bigelow voiced the sentiments of the meeting when he said in his opening address: "The San José scale has invaded fruit trees in all parts of this continent, and is the most destructive and difficult to destroy of any insect pest. It is not yet known to be in Nova Scotia, and you will be called upon to recommend strong legislation to prevent its appearance here. The man who plants an imported nursery tree in Nova Scotia this year is his own worst enemy, and should be dreaded and despised by fruit growers generally."

The general opinion was that everything should be done to delay, as far as possible, the day when we shall be called upon to fight this dreaded pest in our orchards, since methods of combatting it are certain to improve with each year.

The matter was referred to a committee, with instructions to draft a bill which should give to orchardists the best protection possible.

The subject of next importance was our apple trade with Great Britain. An entire session was devoted to this discussion, and many interesting and important facts were given by the different speakers.

Mr. John E. Starr, who was appointed by the Dominion Government to investigate this subject, said that in his opinion it was of vital importance to

the fruit growers to secure better ventilation for the apples while crossing the ocean, a large part of the damage which they sustain being due to lack of attention to this point. He said that he knew from personal observation that apples shipped last October, and well ventilated during the passage, arrived in prime condition; while later shipments, which should have been in even better condition, but which were closely packed on account of greater demand for room, were seriously damaged by heating in the ship's hold. Gravensteins, when subjected to such treatment, are scarcely to be recognized, having lost their characteristic flavor and being dull and unattractive in color.

A radical change in this matter of storing apples in vessels is needed. Whereas now all the skill of the stevedore is employed to pack the largest number of barrels in the smallest possible space, the object *should* be to so distribute the apples that a sufficient number of air passages should be left to admit of adequate ventilation. This would necessitate the use of lumber to hold the barrels in place, but this could be disposed of on the other side for as much as it cost. Dependence should not be placed entirely on the full-mouthed ventilators now used to force air into the ship's hold. They are quite effective when the ship is running against the wind, or even when there is a calm. But in the event of the ship running directly with the wind, there is not the slightest movement of air in the cargo.

Some system of exhaust fans should be provided for such emergencies. In years of large crops the danger of this

## DOINGS OF OTHER SOCIETIES.

overcrowding is greatest, because there is the greatest demand for space. Yet this is the very time when apples should be placed on the market in the best possible condition, for when fruit is cheap it goes to many parts of Great Britain not usually reached, and if the fruit is good, these new customers will buy again the following year, even though the price be considerably advanced.

Another point emphasized by Mr. Starr and others who spoke on this subject, was the importance of shipping each variety in its season. Do not hold back Gravensteins in the hope of getting higher prices, and then ship them when the market calls for Kings and Ribstons. The result is disastrous to all concerned.

Mr. Henry Shaw, of Waterville, gave an account of some very interesting results obtained by him in irrigating his orchard. He has irrigated for the past two seasons. In 1896, in common with those who did not irrigate, he had a full crop. In 1897, on trees thoroughly

irrigated the previous year, he had another full crop. Trees which had received a scant supply of water gave a half crop, while those which had received no water gave practically no fruit. The outlook for 1898 shows corresponding differences. The trees not irrigated, after a year's rest, promise a fair crop; but those which received some water promise a better crop, while those thoroughly watered (though they have borne two full crops in succession) now give promise of the largest crop of any trees in the orchard. These results are certainly important, as throwing some light on the vexed problem of how to produce annual crops of fruit.

Other important subjects discussed were: — "Spraying," "Cranberries," "Black-knot," "Pruning" and "Cold Storage."

The following officers were elected: — J. W. Bigelow, Wolfville, President; Peter Innes, Kentville, Vice-President; S. C. Parker, Berwick, Secretary; Geo. Munro, Wolfville, Treasurer.

F. C. SEARS.

**COBOURG HORTICULTURAL SOCIETY.**—At the annual meeting of the Cobourg Horticultural Society it was decided to continue in affiliation with the Fruit Grower's Association of Ontario, and to arrange for several lectures on fruit and flower life by eminent experts to be given this winter. The treasurer's report showed a cash balance of \$25 at the end of the year, after paying all expenses. We give the following extract from the secretary's excellent report for the year 1897: During 1897 the work of this society was devoted mainly to the introduction and distribution of choice varieties of plants, shrubs, bulbs and trees, for the decoration of home grounds—for garden propagation and orchard cultivation. Of these new varieties the largest quantities were distributed as follows: Fruit trees, 75; roses, 300; hydrangeas, 50; can-nas, 300; clematis, 100; gladioli, 5,000; hyacinths, etc., 500; lilacs, 25; lillies, 50; besides anemones, chrysanthemums, altheas, hibiscus, spireas, deutzias, syringas, golden elders, honeysuckles, ampelopsis, etc., in smaller quantities. Who can estimate the embellishing and beautifying effects produced by the successful culture of the foregoing

splendid varieties of fruit and flower in Cobourg? We regret that we are unable to give secretary Snelgrove's excellent report outlining the work and aim of the Horticultural Society in full, but join with him in hoping that the commendable work of beautifying home and town, which this society inaugurated so successfully in 1897, will be carried on even more systematically in 1898.—Cobourg World.

**KINCARDINE.**—At the annual meeting of this society in January the election of officers was carried by one motion, after which the annual meeting adjourned, and a meeting of the directors was at once convened, when on motion it was resolved that several ladies be appointed honorary directors of our society, when 14 were selected and the secretary instructed to notify same of their appointment. It was predicted that this addition to our directorate of the ladies insure our society a most successful exhibition of flower plants, etc., sometime during the year of 1898. It is to be hoped that the action of our Board in trying to secure a hearty co-operation of the

ladies in the manner above stated, will not be deemed *ultra vires* of the Statute, by the powers that be. We desire to try the experiment, hoping for success. Our financial statement for 1897, shows that in addition to the nice premiums given to our society last spring by the Ontario Fruit Growers' Association, which were much appreciated. Our directors procured and distributed flowers, plants and bulbs, to our 60 members to the amount of \$42.61, and we have a cash balance in the Treasurer's hands from last year's receipts of \$24.46 not a bad showing for our first year, our total receipts from members' subscriptions, Legislative grant, County grant, exhibition fees and sale of a few bulbs amounted together to \$157.77; and our total disbursements, \$133.31, leaving a balance in hand of \$24.46. Every member receiving the CANADIAN HORTICULTURIST, are highly pleased with same.

JOS. BARKER, Sec.

THE ORILLIA HORTICULTURAL SOCIETY.—The annual meeting of the Orillia Horticultural Society was held on Wednesday, the 12th ult. The retiring President, Mr. Tool, occupied the chair. The Secretary-Treasurer made his usual financial report, showing, with a balance of \$21.38 from 1896, total receipts of \$261.08, of which \$131.50 represented membership fees. The total expenditure was \$171.65, leaving a balance on hand of \$89.43.

Before vacating the chair, Mr. Tool suggested that in view of the satisfactory state of the finances and the great increase of the membership during the last two years, it

might be desirable this year to assimilate the methods of the Society somewhat to those which prevailed in many societies throughout the province. It was complained of by many of the members, mostly residents of the town, that beyond the satisfaction of knowing that the Society seemed to be doing good work in its way, they received no value for their annual fee of one dollar each, whilst in some such societies, each member became, by affiliation, a member of the Ontario Fruit Growers' Association, and thereby entitled to a yearly subscription of the HORTICULTURIST, to receive the Association's Annual Report (a publication of much value) and to share in their annual plant distribution, and also a distribution of bulbs, plants, or seeds by the Horticultural Society. Most of the societies which give so much to members do not have exhibitions nor award prizes, so that all their funds are available for such purposes. The Orillia Society is of longer standing than most and began with shows and prizes, and it might not now be well to entirely give up their work in that direction; but if the annual fee were to be raised to say \$1.25 and a membership of two hundred gained, there would probably be funds enough to carry on both methods and it might be well that the society should consider the matter. A good deal of discussion followed Mr. Tool's remarks and it was moved by Messrs. G. H. Clark, and E. B. Alport, that the executive and Board of Directors for 1898 be requested to consider the matters, as suggested by Mr. Tool and that they be fully authorized to deal with them as they may think best. This was carried unanimously, and the meeting was then adjourned.

## AN APPLE PUZZLE.

THE following addition to the apparent mystery and the errors of figures is taken from the St. Nicholas Magazine. Perhaps some of our clever Model School or Collegiate Institute scholars can furnish a solution and tell where "the hole in the saucepan" is:—"Once upon a time there were two old men who sat in the market early every morning and sold apples. Each one had thirty apples, and one of the old men sold two for a cent, and the other old man sold three for a cent. In that way the first old man got fifteen cents for his basket of apples, while the other old man received ten cents, so that together they made twenty-five cents each day.

"But one day the old apple-man who sold three for a cent was too sick to go to the market, and he asked his neighbor to take his apples and sell them for

him. This the other old man kindly consented to do, and when he got to market with the two baskets of apples he said to himself: 'I will put all the apples in one basket, for it will be easier than picking them out of two baskets.' So he put sixty apples into one basket and said to himself: 'Now, if I sell two apples for one cent, and my old friend sells three for one cent, that is the same thing as selling five apples for two cents; therefore, I will sell five apples for two cents.'

"When he had sold the sixty apples he found he had only twenty-four cents, which was right, because there are twelve fives in sixty, and twice twelve is twenty-four. But if the other old man had been there, and each had sold his apples separately, they would have received twenty-five cents. Now, how is that explained?"



## ❖ Flower Garden and Lawn. ❖

### GARDENING IN THE WINDOW.

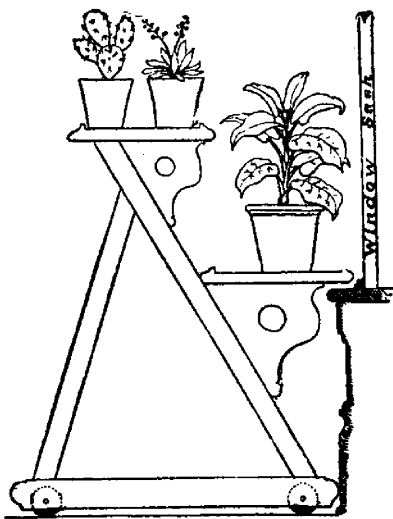


FIG. 1311.—END CROSS SECTION OF A PLANT-  
STAND ON ROLLERS.

**I**F an enumeration could be made of persons who cultivate window plants in our land, it would be found that they were far into millions. What Daniel Webster said is true: "The culture of plants seems to be a common field, where every degree of taste and refinement may unite, and find opportunities for their gratification." It will not be inapt therefore, at this time in the winter season, when the culture of house plants gives especial delight, to consider somewhat certain phases of their management. This is especially true inasmuch as

many young persons, and others, every year enter upon window gardening for the first time, or else do so on an enlarged scale.

Requiring, as young plants do, both light and warmth, a south window should be the first choice as winter quarters for pot plants. Still there are some other points necessary to be considered. For instance, plants do not succeed as well near a stove or hot air register as they do farther away; should the heater therefore be near the south window it may be necessary to keep the plant-stand elsewhere. An east or west window, the former preferred, should be the next choice. Indeed in the spring and summer either of the latter is somewhat preferable to a south window, because of the stronger sunshine in the last named at a season when neither heat nor excessive sunshine are required.

But what of a north exposure for pot plants? If there is no other window available, one need not be without beautiful plants and flowers even here, if such be properly selected. Here is a list of some good north-window plants: Tulips, hyacinths and other Dutch bulbs, *Aspidistra lurida*, and its variety with variegated leaves, India rubber plant, gold-spotted farfugium, English ivy, German ivy, (*Senecio*), Agaves,

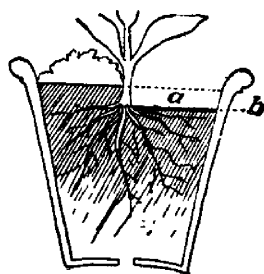
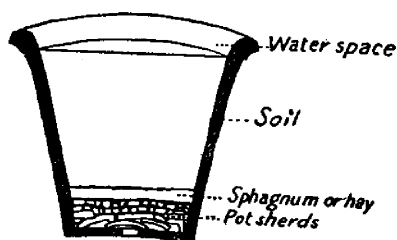


FIG. 1312.—DRAINING A FLOWER POT. FIG. 1313.—FEEDING PLANT BETWEEN RE-POTTING.

palms, especially *Latania Borbonica*, *nephrolepis*, *pteris* and *Iomaria* ferns, *lycopodium*, *Wandering Jew* in several varieties, *sedum*, *money-vine*, etc.

One thing must not be lost sight of in finding a place for the plant-stand, namely, that the place of best light, that is, near the glass, also is the coldest place in a room. For this reason one must especially guard against frost bites in the winter. A movable plant-stand, mounted on rollers after the plan of Fig. 1311 is very useful for promoting health and bloom in window plants. It should be built so that the lower shelf comes, in the day time, close to the window sash as here shown. Then at night when no light is needed, the stand can be rolled back into the room where it is warmer. As such a stand

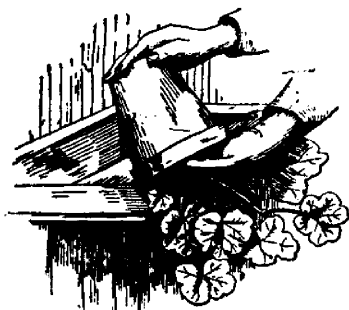


FIG. 1314.—TAPPING A PLANT OUT OF A POT.

can be moved up to any window, in some cases the plants could, part of the time, be kept at a south window, and at other times at one less favorable for

light, but perhaps more favorable as regards heat.

Undoubtedly the best place for house plants as regards heat is to have them in a room adjoining the one where the stove stands, and with the rooms connected with open doors, so that the warmth will be sufficiently diffused.

The average collection gets along best where there is a night temperature of from forty-five to sixty degrees at the plant-stand. In the day time the place may well be ten or fifteen degrees warmer.

A fertile soil is an important point in house plant culture. It may be called the food question, and florists will tell you that in order to have fine plants they must receive good food. The best soil is one that is especially prepared some months before it is used. It consists of two parts of thin sods from a meadow, chopped up fine, and mixed with one half the amount of old rotten cow dung. Such soil can usually be bought of the florists for a small price. Insist on getting the best when you buy.

As a pot plant grows, the common way of adding to its food is by repotting into a larger sized pot. How shall we know when it needs repotting? Tap it out of the pot, and if the outside of the ball of earth is pretty well covered with white roots, over about one-fourth or one-third the surface, shift into a pot

about two sizes larger. How to remove a plant from the pot is shown in Fig. 1314. Press one hand firmly against the soil, tap the edge of the inverted pot sharply on some hard surface and out the plant slides. In repotting, place drainage material and soil (see Fig. 1312) in the larger pot, in which set the ball and fill soil into the space around the ball, firming it quite compactly, with the fingers or with a stick.

How to feed plants between repotting is shown in Fig. 1313. It is done by removing the soil about an inch at (a) and applying a thin layer (b) of bone meal or other concentrated plant food or of animal manure, afterward returning the soil at first removed.

A plant may be well fed and yet injured by drought. The air of our rooms is dry, almost desert-like; that is why such desert plants as the cactuses succeed so well here. One reason why plants in the kitchen usually look so well is because of the greater amount of moisture contained in the atmosphere.

Sometimes plants are overwatered; many tiny things are killed in this way. Still in a well drained pot like that of Fig. 1312 such a thing can hardly happen. At the bottom there is a layer of potsherds, the coarser ones carefully laid to overlap somewhat, finishing with the finer bits at the top. On the potsherds is placed a layer of sphagnum or fine hay to keep the soil from passing into and clogging the drainage below. In all plant-potting operations, the work should be finished to have an inch of space below the top of the pot in which to receive water.

A dirty plant or a dirty pot is discreditable to any plant grower. A bath tub should therefore be a part of the plant grower's equipment. Any small tub, with an inclining draining board as shown in Fig. 1315 answers the purpose.



FIG. 1315—THE PLANT BATH TUB.

The dry plants may be stood in the tub until the ball is thoroughly soaked. Sometimes pot plants seem to be well-watered when it is only the surface that is wet, and perhaps the centre is dust dry. Plants in rapid growth need much water. So usually do blooming plants.

To bathe a pot plant incline it on the draining board, and with water in the tub, wash all parts well with a sponge. The task is more delightful as plant after plant comes from the water clean and beautiful.

Insects usually show up first on the weaker subjects, a hint that the way to keep ahead of vermin is to keep the plants healthy by good attention. Take that common pest, the green louse,—it is seldom seen on well plants that receive a weekly sponge bath; it is about the same as regards scale and the mealy bug. That other destructive pest, the minute red spider, which looks like a speck of cayenne pepper, succumbs likewise to washing and other good care.

If one must resort to remedies in any case, by washing plants in an infusion of tobacco and water having the color of tea, plant lice will be killed; while scale and other insects yield readily if washed

in soap suds as warm as the hands can bear.—this will destroy the young that are too minute to be seen with the naked eye. Every such washing should be followed, after an hour, with a douche of clean water

As regards airing the plants, it is perhaps sufficient to say that what in this respect is healthful for human lungs will suit the plants. But do not forget that the plants cannot take a walk on a pleasant day, hence fresh air should frequently be admitted to them from the window.

In nature all trees and plants have their season of growth and of rest, a principle that must be observed in house

plant culture. When therefore any plant, after a period of growth and bloom, shows signs of lessening growth, water also should be somewhat withheld. In a state of rest from growth most kinds can get along with lessened light also, and this we may take advantage of, by putting such kinds as fuchsias, oleanders, hydrangeas and scarlet geraniums in a light cellar, while growth is suspended. Almost without exception it is best as the end of the resting season approaches, say late in winter, to shake the old soil from the roots and re-pot the plants into fresh earth.—Vick's Magazine.

## NEW CANNAS.

DEAR SIR,—In looking over my notes on the newer Cannas, I am reminded of my promise to you of a report on them. I confess that I am at a loss what to say and do justice to them, and at the same time express fairly my opinion. There are too many varieties before the public, and too few good ones. We in America are too free to condemn the want of distinctiveness among the new continental varieties, but on the other hand are constantly introducing replicas of those long superseded, or with variations so slight as to require critical comparison, in order to distinguish the actual difference

The greatest lack of value and quality is in the dark foliage section, which I regard as most valuable for contrast in bedding, against a background of lawn or shrubbery. Lack of substance and vitality in the tuber, are strong points against most of the varieties in general use.

The past season was a most trying one, for which due allowance must be made.

While the enormous flowers of the new Italian hybrids are too frail to stand much of our bright sun and high winds, they should certainly be in every collection, for the sake of the few hours they afford striking contrast to the massive foliage peculiar to this section.

Without repeating catalogue detail, I give first choice to Alemannia, America, Baronne de Poilly, Hortense, Barbereau, Mlle Berat.

For second,—Africa, Aphrodite, Asia, Burbank, Beaute Poitevina, Directeur Roelz, Francois Billard, Franz Buchner, Leonard Lille, L. P. Lehalleur, Madagascar, Paul Lorenz, Roi des Rouges, Souv de Jeanne Chaure, Souv de Mme Crozy.

Instead of noting the third, in which we can feel little interest, the following older varieties are most desirable :—A. Bouvier, Austria, Comte de Bouchaud, Chicago, Columbia, Etendard, Eldorado, Furst Bismarck, F. Vaughan, F. L. Harris, Italia, Mme Crozy, Mme A. Bouvier, Mme Montefiore, Papa Canna, P. J.



## UTILIZING PIAZZAS FOR PLANTS IN WINTER.

Berckmans, Queen Charlotte, Souv de Ant. Crozy.

The many and valuable varieties of American origin, I leave to the critic who has tested them all, with the warning to be justly severe. These are the offspring of continental hybrids, and we

may always take it for granted that specialists "keep something up their sleeve," and can "go one better" than the best; also that improvement by selection is not in leaps and bounds, but steadily—yet surely—forward.

*Simcoe.*

H. H. GROFF.

## UTILIZING PIAZZAS FOR PLANTS IN WINTER.

**T**HOUSANDS of farm houses have piazzas upon the sunny side that might be utilized for both pleasure and profit in the winter. Such utilization, moreover, would entail no great expense outside of the small amount of home carpentering that would be required. There are two or three points to be considered when making a plant room of a piazza. First, as to floors. The ordinary piazza has no tight underpinning to keep out the cold. Usually it has only lattice work, while the floor, also, is generally more or less open. It would be no great trouble to lay a new matched floor over the few feet of space to be occupied by the plant room. Then cover the lattice work around the base of the piazza with heavy, resin-sized, or tarred building paper, tacking it tightly, and bank with evergreen brush. Now, as to the outside walls. The greater part must, of course, be of glass, but it is not advisable to have the sash extend to the floor. From the piazza rail down let the wall be of matched boarding. Along the front this could be screwed to the inside of the rail. Sash to fit any opening can now be bought very cheap. It is desirable that communication with this plant room be from a living room rather than by a hall door, so it may be found desirable to cut down a window and make a door of it. This will obvi-

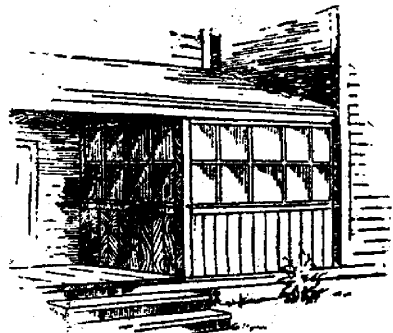


FIG. 1316.—A PIAZZA GREENHOUSE.

ate the necessity of having a door in the outside, temporary partitions.

The heating of such a plant room can be done in a number of ways, but the simplest and most satisfactory for the average farmhouse will probably be by the use of an oil stove. These little sitting-room oil-heaters have been so improved and made so reasonable in price, that they will be found wonderfully convenient for just such use as this. Care should be taken, however, to get a make in which the flame will not "crawl" up and smoke, if left by itself. The accompanying illustration gives a suggestion as to the making of a plant-room upon a piazza. Of course, piazzas differ in shape, but the same principle of treatment will apply to nearly all cases. Make all as tight as possible, then an oil-stove will give sufficient heat to keep the plants in health. —Amer. Agriculturist.

## PRIMULA OBCONICA.



FIG. 1317.—PRIMULA OBCONICA.

ONE of the most beautiful and reliable of winter-blooming house-plants is the new large-flowered fringed variety of *Primula obconica*, a plant and flower cluster of which are shown in the engraving. The foliage is neat and handsome, and the numerous clusters of exquisite flowers are produced upon long stems throughout the winter and spring months. A four-inch pot will accommodate a fine specimen, and half a dozen such grouped together in a window will make a mass of delicate bloom that will elicit unbounded admiration from every person of refined taste who may enjoy the sight.

The *Primula obconica* was introduced

from China some years ago, but has not as yet become popular, owing probably to the fact that it has never been largely advertised. As a winter-blooming plant it is certainly as valuable as the well-known and justly popular Chinese Primrose. The enlarged and improved flowers of the plant as now grown, make it much more desirable than the typical species, and as propagation is readily effected from seeds there is no reason why anyone should fail to grow it. It is of the simplest culture, requiring only the treatment of the old Chinese species. This plant should be placed upon your list for trial from seeds the coming summer.—Parks F. Mag.

## BEAUTIFYING OUR HOMES.

**A**MONG the important matters that Horticultural Societies should be interested in is one of beautifying our homes and lawns. It is a sad mistake for one to suppose that all he needs to do is to plant and his yard will be beautiful. It is another great error to think that while the trees are small they are not beautiful. A lover of trees can and should enjoy their growth, see beauty in every budding branch, in every falling leaf, in every naked twig, and in every bud or leaf or blossom or fruit.

In planting our yards or lawns or groves, let us follow these few simple rules, and we shall not go far astray, but they shall give a pleasing effect to the eye. 1. The first beauty of a lawn is a fine grass plot. Have a beautiful, clean, closely shaven, velvety grass all over the yard. 2. Plant abundantly, plant small trees, plant hardy varieties. 3. Plant in groups, shrubs in one, deciduous trees in another, evergreens in another,

herbaceous plants in another; but do not mix them indiscriminately. 4. Always leave open spaces or vistas, so that you can have a fine grass plot, as well as trees, shrubs and vines. The contrast of a beautiful, open, green sward gives untold added beauty to the trees or shrubs, that they wholly lose if planted indiscriminately. 5. Care and attention; a good mulching to all newly planted trees is necessary; pruning them just enough to keep them in shape is all that is needed. Never prune an evergreen up from the ground; keep everything in bush form that can be so kept by proper pruning. Keep as nearly the natural growth as the conditions will permit with neatness. Cut out the trees, shrubs or plants as fast as they interfere with one another. Never let one tree or shrub spoil another because they are too thick. Following these rules, we need not fear but our yards will be beautiful.—I. A. GOODMAN, Missouri.

**THE CATALPA.**—(*C. syriaca* folia.— This beautiful tree is very seldom seen, few indeed except professional gardeners having any acquaintance with it, yet a more handsome object whether in regard to its foliage or when in flower, it would be hard to find. The leaves of the Catalpa are large, heart-shaped, and of a peculiar pale green hue, which at once attracts attention. The flowers, which are produced early in August, are very handsome, and this season they have been borne in great profusion. In shape each resembles a small Gloxinia, but they are white, slightly shaded with purple, and spotted in the throat with

purple and orange. The tree does not flower freely until it has attained a considerable size, 18 ft. or 20 ft., but it is of very rapid growth in the early stages, soon forms a large, handsome head, and then increases more slowly. In the autumn the foliage becomes of a beautiful golden yellow color before it falls, which contrasts well with darker leafage behind and around it. The tree is, unfortunately, not thoroughly hardy, and except in sheltered spots should only be planted in the Southern counties. It is increased by seeds, which are freely produced in warm summer.



## The Canadian Horticulturist

**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.

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**LOCAL NEWS.**—Correspondents will greatly oblige by sending to the Editor early intelligence of local events or doings of Horticultural Societies likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of Horticulturists.

**ILLUSTRATIONS.**—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages of gardens, or of remarkable plants, flowers, trees, etc.; but he cannot be responsible for loss or injury.

**NEWSPAPERS.**—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

**DISCONTINUANCES.**—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrearages must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post Office address is given. Societies should send in their revised lists in January, if possible, otherwise we take it for granted that all will continue members.

### ✦ Notes and Comments. ✧

**CONSERVATORY OPENINGS.**—Through the kindness of the proprietors, a large number of private Conservatories will be open to members of the Montreal Horticultural Society on the Saturdays of February and March. This is an example worthy of imitation in other cities. Why not also include some private pleasure grounds?

**FRUIT** from the United States is not allowed to be landed in Germany. This restriction is to prevent the introduction of the San José scale. So far, Canadian fruit is not barred, and will not be if our orchards continue healthy; but once permit this scale to become commonly distributed, and there will be an end to our profits in fruit growing. This emphasizes the importance of prohibiting the importation of U. S. nursery stock and fruit—lest Germany shut her gates against us also.

A SAN JOSE scale Act has been passed by the U. S. Congress, providing for inspection of nursery stock, and making it illegal for transportation companies to carry, or for persons to export, such stock without being first subjected to proper inspection. This does not satisfy Canadian fruit growers, because such inspection is not a complete guarantee against infestation, and besides we note that the Act does not come into force until the 30th of June, next, by which time tens of thousands of dollars' worth of U. S. nursery stock might be brought into Canada, much of it more or less infested.

We hope the Dominion will take prompt and vigorous measures in dealing with this pest.

**CANADIAN HORTICULTURAL SOCIETY** is the title of a new organization completed in Toronto on the 10th February.

## NOTES AND COMMENTS.

Mr. Wm. Gammage, of London, was elected President, and Mr. Hugh McLean, of St. Thomas, Secretary. This society is composed of professional florists, and will no doubt do much service in the interests of the trade. This will not in the least trespass upon our work, which is wholly in the interests of amateurs. There is also a possibility of this organization publishing a trade Journal for florists.

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**HARRAHAN'S AUTOMATIC REFRIGERATOR CAR.**—We are in receipt of a letter from Mr. F. R. Latchford, of Ottawa, in which he calls attention to the failure of our export shipments of fruit last year, owing to the poor system of refrigeration in use both on steam cars and steamboats. Mr. Harrahan's system seems to be excellent and is economical, inasmuch as the ice is only needed at the middle, a great saving in both maintenance and operation.

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**THE BURBANK plum** is recommended as the most valuable for general cultivation, by Mr. S. D. Willard, of Geneva, N. Y. He says it is a fairly good plum and gives best crops. Last season he shipped 2,500 ten pound baskets of them to three different markets, and they netted him from 15c. to 25c. each, which was good for the season. He labelled them "Best canning plum." The tree is inclined to overload, but the fruit must be thinned.

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**THE CUT OF THE FOREST BELT**, on p. 51, is from a photograph taken by Mr. Shutt, of the Central Experimental Farm, to illustrate an article by Mr. W. P. Macam, which appeared in the Farmers' Institute Report.



FIG. 1318.—TRIUMPH PEACH.

**THE TRIUMPH peach** is being widely advertised, but we have not yet tested it, though we hope for fruit this coming season. It originated in Georgia, and is claimed to be a good yellow freestone, which is of about same season as the Alexander. The flesh is yellow, quality fine, and a freestone.

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**THE MANITOBA HORTICULTURAL SOCIETY** is the name of the newly organized Society in that Province, which holds its Annual Meeting in the City Hall, Winnipeg, on Friday, February 18th. It exists for the same effect as our own Association, the circular issued stating that "The Manitoba Horticultural Society exists for the purpose of advancing the interests of Horticulture in the Departments of Flower growing, Fruit growing, and Tree growing, throughout the region between Lake Superior and the Rocky Mountains. It aims at discovering the kind of plants, and methods of cultivation most suited to the soil, the climate, and the peculiar circumstances of this country."

## ❖ Question Drawer. ❖

### Black Currants Do Not Bear.

**978.** SIR.—Could you kindly give me a reason why Black Currants are such a poor crop here, large bushes not giving over one quart each, and often not over a cupful although they are well cultivated and manured, and any old wood cut out but still there is plenty of two and three year old wood left to bear, as I also thin out all weak one year old shoots. As to kinds, the Black Naples is as good as any although Lee's Prolific had a very fair crop last year, but the one you sent out, one of Sanderson's seedlings has borne well and is of great promise.

A. J. COLLIN.

The experience of Mr. Collins is but a repetition of that of each of us, who has tried growing black currants for profit. Can any one tell how to make them productive?

### Rockport Bigarreau.

**979.** SIR.—We have a large cherry tree of Rockport Bigarreau that we gathered 150 quarts off last season, but from some cause the fruit did not ripen properly, and nearly the whole of them begun to rot badly so that really we had none that was good. The tree is shaded from the morning sun, if the whole of them had ripened all right we should have had over 200 quarts, generally they are a fine large meaty cuerry, once before there was quite a lot rotted on the same tree, other trees of the same kind were very fine. We were thinking it would be a good plan to give this tree several sprayings next spring and summer with copper sulphate and Bordeaux mixture. Would you advise us to do so, and do you think it would save the fruit.

WALTER HICK, *Goderich.*

Probably no variety of cherry is so subject to rot as Rockport. We have had it in bearing at Maplehurst for twenty-five years, and though it loads tremendously, not one-half the fruit ever ripens. The rot comes on just before maturity, and rapidly spreads throughout the tree, especially if favored by showery weather. Spraying with Bordeaux mixture about three times, once before blooming, once after, and again when the fruit is half grown, should control this rot.

### Planting An Orchard.

**980.** SIR.—I intend setting an orchard of 300 apple trees, and am at a loss to know the best varieties. As you are in the fruit business, please give me your opinion, naming six good kinds for the English market. many speak high of the Ontario.

R. D. PICKERING.

Varieties that succeed in the Niagara peninsula might not succeed well north of lake Ontario, yet speaking generally, the following six varieties may be planted with confidence, viz : Duchess, Gravenstein, Blenheim, Wealthy, Ontario and Ben Davis.

### Canning vs Evaporating Factory.

**981.** SIR.—Please say if you think there is a good chance of making a success of our evaporating factory on the co-operative plan; or would an evaporator be more likely to succeed?

E. E. H. OAKVILLE.

A first class canning factory needs a large investment of capital, and must be most carefully managed to avoid a financial failure; but an evaporator requires much less capital, and is therefore more certain of proving a safe investment.

### Ground Cherries.

**982.** SIR.—Kindly furnish me with such information you may have on hand regarding the culture and different kinds of ground cherries and prices usually obtained per lb. or bushel and were the best market is for the same. Can you furnish the seeds? If not where can they be obtained and what is the price per lb.

E. S. BROWN, *Parma, Ont.*

*Reply by Prof. Taft, Michigan Agricultural College.*

The ground cherry requires about the same care as the tomato. The seed may be sown in a hotbed, or in a box in the house, and transplanted when danger of frost is over; or may be sown

## QUESTION DRAWER.

at once in the open ground, but in ordinary seasons the extra trouble of transplanting will be repaid. The rows should be three feet apart and the plants 18 to 24 inches apart. I have never known of their being grown for market and can give no prices. The seed is sold by seedsmen at about 30 cents per ounce. Any of the large dealers can supply it.

### World's Fair Medals.

983. SIR,—Did you ever hear of any one in the county of Huron, or any other county in the Dominion, who received his award for fruits exhibited at the Columbian Exposition. If any one has received it, I would like to know who it is. I sent quinces and Whitesmith gooseberries, and so did other persons from this section, but I have not heard of any one who received his award.

JESSE GRUMMETT, Nile, Ont.

A large number of awards were made to the exhibits sent from Ontario, but it appears that they were afterwards very much cut down by some committee of revision. Ontario had taken so many more fruit awards than any State in the Union, that it did not seem pleasant to the committee to make the awards as first decided upon by the judges. We do not see any other explanation of this matter. A certain number of medals have been sent on and distributed, but not nearly the number that was at first expected.

### English Cherry.

984. SIR,—I have an English cherry which last year had an abundance of blossom and green fruit but very little of it ripened; it was situated on a high bank of sand, and had not much cultivation before. Please tell me what to do with it. It is about 20 years old.

ENQUIRER, Port Colborne,

Enquirer does not state whether the cherry rot (*Monilia*) is the cause of the fruit not ripening, nor the variety of English cherry. We judge, however,

the rot must be the cause, and would suggest thorough spraying with Bordeaux mixture, first before the blossoms open, second after the fruit has formed, and third about two weeks later.

### Barrel Strawberry Culture.

985. SIR,—In American Gardening of Feb. 5th is an article on barrel Strawberry Culture practised by J. P. Ohmer of Dayton, Ohio, accompanied by a photograph of Mr. Ohmer and his barrel. Many of your subscribers would no doubt be pleased to have in your valuable Journal, directions for this novel method of culture, and even if we, especially amateurs like myself, could not expect such favorable results as Mr. Ohmer claims to have had, yet the novelty of the thing might induce us to try a barrel or two

P. BARCLAY, Petrolia, Ont.



FIG. 1319.—THE BARREL STRAWBERRY.

For the benefit of any readers who may want to try this novel method of growing strawberries, we give a reduced copy of the cut in American Gardening, together with letter from F. W. Ritter, of Dayton, O., regarding it:

"I am sending a photograph of strawberries growing in a barrel, with the grower, J. P. Ohmer, of this city, standing by its side. The picture shows the barrel standing on a platform wagon as Mr. Ohmer exhibited it on the streets of Dayton.

"While this method of growing strawberries has been described in the agricultural papers of the country a number of times, Mr. Ohmer is the only one that I know of to demonstrate the practicability of the method, he growing last season 60 barrels. Mr. Ohmer is very enthusiastic on the subject and claims that one can grow 1,250 bushels of strawberries per acre and figures it in this way: By placing the barrels four feet from center to center, one acre will hold 2,500 barrels and if each barrel will produce one half bushel of berries, as Mr. Ohmer's did last season, the acre would yield 1,250 bushels of berries, Mr. Ohmer says you have no weeds to fight and do not have to break your back in picking them, besides they require no mulching to keep the fruit free from sand. All you need is plenty of water and the crop is assured; he told the ladies of our Horticultural Society at one of its meetings that they could grow strawberries in their parlors by this method."

We have written Mr. Ritter for further particulars, but can see nothing difficult about planting in this way. The holes would be first bored, and the plants set as the barrel was being filled with rich soil. There would be three very important points to consider:—1st, the soil—which should be very rich with compost, and especially with nitrates; 2nd, the variety, some such kind as Clyde or Bubach would probably do well; and 3rd, there must be a plentiful supply of water. In a town garden where a hydrant is convenient and ground limited in extent, this would be a capital way of growing a table supply of strawberries.

### Rose Thrips.

956. SIR,—I was much troubled late last summer with thrip on roses, both hybrids and climbers, and though I have used both tobacco juice and fir tree oil, I could not reduce them to submission. What other remedy had I best apply?

R. N. LIGHT, *Kingston.*

*Reply by Prof. Hutt.*

Thrips, when infesting plants out-of-doors, are by no means easy to contend with. Prof. Fletcher, Ottawa, in one of his reports, says that the remedy "which

gives the most promise of success is a weak kerosene emulsion, in the proportion of one of kerosene to thirty of water, to be applied at the time when the young bugs have hatched.

### Lilium Speciosum.

957. SIR,—Last spring I received a bulb of *L. speciosum* roseum from your Association, and buried it in a large pot, in October, putting it in a dark cellar for a month or two; but it never came up. I am much disappointed and would like to know the cause.

R. H. LIGHT, *Kingston.*

*Reply by H. L. Hutt, O. A. C., Guelph.*

It is altogether probable that the failure of the lily bulb was due to the bulb itself and not to the treatment given it. Many have experienced just such failures with their lily bulbs this year. The nature of the disease causing the trouble has not yet been definitely determined. One of our students has been working for some time on a similar trouble on other bulbs, and it is hoped that before long something more definite may be ascertained.

### Azalea Indica.

*Replies to Questions.—972.*

It is doubtful if Azaleas can be grown successfully as house plants, and if Lindsay does succeed, the detail would be a valuable communication to our Journal.

There should be no difficulty in blooming the plants just purchased, with buds developed by expert treatment.

On arrival, and before potting, the root-ball should be thoroughly soaked with water. The pot used must be about one inch more in diameter than the ball. The soil may be any well rotted sod loam, and if prepared in the usual way with manure, no harm will be done. The plant should be placed



## OPEN LETTERS.

in a cool greenhouse, or room, near the glass (the air of the living room of a dwelling is too hot and dry), and the foliage sprayed daily until the buds burst.

After blooming, pick off the seed-pods, and when danger of freezing is past, plunge the pot in full exposure to the sun, with coal ashes beneath to prevent the work of earth-worms. Pinch back straggling growths to keep the

head symmetrical, and spray freely every day during hot dry weather, with a decided under-cut.

The above treatment should place the plant in original export condition, and if wintered in a cool moist atmosphere, well aired, and sprayed on bright days, the results of the first season may be repeated; after which treat as before, transferring to a larger pot if needed.

H. H. GROFF.

## \* Open Letters. \*

### Nelumbium luteum.

SIR,—In mentioning the *Nelumbium luteum* in November number, a very important habitat, viz., shores of Lake Erie, Province of Ontario, was omitted. *N. speciosum* is naturalized in ponds in New Jersey.

J. M. D., Hamilton.

### A Glimpse of Spring.

SIR,—On the 11th day of February, I picked my first Snowdrops. What wonderful little flowers, for, about the 11th of January, the ground was bare and not a sign of growth; then came eight inches of snow, and under that mantle the little plants first made a growth of leaves about one inch in height, and then a little tender green stem starts up, carrying with it a small drooping bud, and as it forces its way through the snow the bud increases in size, till the stem is about three inches long; by that time the bud is as white as the snow, something in the shape of a small hazel nut. In a short time after they were placed in water, each flower burst open, perfect emblems of modesty and purity. Dear readers, if you have no Snowdrops in your gardens, do not let next fall go by without planting out a few dozen bulbs.

C. J. F., South London..

### The Florida Velvet Bean.

SIR,—I send you herewith sample of the new Florida product—the wonderful Velvet Bean. Up to two years ago it was grown

here in a limited way, mainly as a trellis shade; but afterwards, it being discovered that it was invaluable for all kinds of stock as a forage, and a phenomenal fertilizer for Orange and other fruit trees, and for the soil as well, it has been grown in a larger way since that.

There is nothing yet discovered that is all in all, so valuable a crop as this, for farmers to raise. It being an air plant it will do well in most any kind of soil, in any of the States, north or south, that will grow corn, and no fertilizing is necessary. The forage—the foliage and vine—coming from this bean is a marvel and a wonder.

To plant in rows four feet apart will produce a solid mass of vine and foliage to the depth of fifteen to twenty inches, covering the entire surface of the ground.

Beside the vine being a valuable fertilizer, forage, shade and mulch, you will ask, Is it also prolific in fruit? I answer, Yes, emphatically so. From the hill the vine runs out in all directions like the watermelon, ten to twenty feet. It begins to fruit at the hill like the raisin grape, thence along the entire length of the vines at intervals of ten to twenty inches, pods in clusters of from ten to twenty appear. Therefore the fruitage must be immense.

From twenty to thirty bushels of shelled beans is a modest estimate, from an acre of ground, average crop. I speak from experience, as I have just harvested nineteen acres of as fine a crop as ever grew.

Plant early in spring in rows four feet apart, or drill in furrow, and cover with plow, as you like. From three to five beans to the hill is the right amount of seed. If drill and cover with third or fourth furrow, put in sixteen quarts to the acre. Cultivate and keep clean until vine begins to fill the

row, then lay for the season. In the fall when bean is ripe, pick it. Then turn mass of leaf and vine under for fertilizer. If you want to use any of the forage green, cut up at hill and carry out to stock.

If planted in orange grove or orchard, keep five feet or more away from trees, as the vine is a great climber and will cause you bother. Four to five pecks of perfect seed will plant four acres. If drill, better put in at least sixteen quarts to the acre.

The beans ground up, hulls and all, make a fine fertilizer for pineapples, orange and other fruit trees, as well as for all vegetable growth. Stock of all kinds like it, as well as the green forage early in the season, and all do specially well on it. There is nothing on the farm that does not eat this bean, from horse to chicken, with greediness. The dry bean is good for the table.

The question is repeatedly asked em, if this bean will do well in the northern States? I answer by saying, there is no earthly reason why it will not, as it is not tropical, and will do well wherever corn will grow.

After having made a thorough test of it, I have come to the conclusion that, as a fertilizer, forage, feed, mulch, shade, a prolific bearer of fruit, an up-builder of the soil, this bean has no rival.

The analysis of the Velvet Bean shows:— Nitrogen 54 per cent., crude protein 19, fat 6, fibre 8 and moisture 12.

Any further information your readers may want, if they will send stamp, I will cheerfully reply.

CAPT. E. A. WILSON,  
Orlando, Fla

## LADY DOROTHEA.\*

THEODORE H. RAND, D.C.L.



I

DAUGHTER of earth and sky,  
They said was Rhea;  
Child of the sunset thou,  
Sweet Dorothea—  
Rose that tells of a mother's  
devotion.  
Canada's rose from Ocean to  
Ocean!

II.

Under far misty skies  
A Lady kist  
A babe, the fairest, best,  
E'er laid I wist—  
On beating breast—  
A skyey, glad surprise!

Years wove their web of care,  
Great duties came  
And other wistful ones  
Ask a love name;  
While brighter cups  
Shone through our northern air.

And as some richer day  
Its lustre shed  
Regret would bud and blow,  
When day was dead—  
Bright afterglow  
Of her that passed away.

III

Queen City of the West,  
Not all unsought  
Viceroy and Lady came,  
And heard untaught  
And true acclaim—  
What loyal hearts exprest.

Here a new rose was born.  
The gardener said  
Lady, my "Sunset" rose  
Blossoms in red:  
See! fair it glows,  
A flake of kindled morn!

A right name give to it,  
As balmy fell  
Soft sleep from heaven that night,  
Quick memory's cell  
Flashed into sight,  
Upon the dark alit.

The child of other years—  
So pure, so fair,  
With dawn-like roses wreathed  
Within her hair!  
As life she breathed—  
The Lady woke in tears.

IV

Than maid of Cherronea  
My child was fairer  
(Gardener she said at even)—  
Our daughter shares  
Long since of heaven!  
Name? "Lady Dorothea."

V.

Daughter of earth and sky,  
They said, was Rhea:  
Child of the sunset thou,  
Sweet Dorothea—  
Rose that tells of a mother's devotion—  
Queen, Mother-love, from Ocean to Ocean!

\*The name given Mr. Dunlop's new rose by Lady Aberdeen.

## FLOWERS IN MARCH.



THE crocus and the primrose bloom  
In amber's varying dyes ;  
And snow drops aid to chase the  
gloom,  
Inspir'd by lowering skies.

So gems—with answering hues—adorn  
The necks of ladies fair ;  
The topaz, and the pearl, there worn,  
Do with those flow'rs compare.

The amethyst and aconite  
Alike their tints display ;  
The violets too, as sapphires bright,  
Their purple tribute pay.

Narcissus next appears, forsooth,  
In jealous yellow clad ;  
Because he lov'd himself, poor youth ;  
And, cross'd in love, grew mad.

Ere long, rose, (oh, beauteous flower !)  
Its fragrance will exhale ;  
And, after ev'ry soft'ning shower,  
Fresh perfume ev'ry gale.

The infant buds, as emeralds, shine ;  
But soon, a crimson dye,  
The jagged calyx rich will line,  
And seem like rubies nigh.

That semblance mark luxuriant earth,  
In precious boons bestows,  
Twixt radiant gems that lie beneath,  
And flow'rs the surface shows !

'Tis thus the Delia's matchless charms,  
Which joy around impart ;  
Within her smiles each floweret blooms ;  
Each gem shines in her heart.

I. KINGDOM.

March, 1814.

## \* Our Book Table. \*

PARK AND OUT-DOOR ASSOCIATION. First Report, Louisville, Kentucky, 1897.

We have just received a copy of this Report from Mr. W. H. Manning, of Boston. The report covers about 100 pages, not only showing the excellent work of the Association, but also containing many valuable papers. As an example, we quote from Mr. Manning's paper on Park Designs and Park Planting :

Plantations upon the public streets, about recreation grounds, or at points where large crowds will congregate, should be made up of plants with uninteresting flowers and a vigorous constitution, tough branches or prickly stems, so that they will repel rough usage and recover quickly from an injury ; while those standing close to pleasure walks, terraces, windows, and about buildings, where they will be under inspection at all times, should be made up of varieties having foliage and flowers and stems that are attractive at all seasons ; whereas plants that are to form a

part of a landscape to be viewed at a distance should be selected on account of the effect of light and shade that they will produce. Similar considerations will prevail in working out the details of all plantations.

It is generally coming to be realized that native plants, especially those having a vigorous growth and healthy foliage, should predominate in all permanent out-of-door plantations, and that with these the exotics can be used to give variety, but in such a manner that no serious injury to the appearance of the plantation will result from diseases to which they are more subject as a class than natives.

Primarily plants are used by a landscape designer as a painter uses his pigments, to secure certain landscape effects. He does not select a plant for a position because it is rare, but because it gives just the shade of color, texture, or outline to complete the ideal picture he has formed in his mind.

### CATALOGUES.

SEED ANNUAL, 1898, A. W. Livingston's Sons, Columbus, Ohio.

THE ash-leaved maple (*Acer negundo*), a herald of spring, with its beautiful green foliage, and its rapid growth, would be an excellent street tree, were it

not for the bag-worm and web-caterpillar being so found of it. It should be skilfully pruned to keep it in good health.—Mass. Hor. Society.

## SEED SOWING.

THE usual failure in getting seeds to grow is from sowing them too deeply in the earth. If it were possible to keep the seeds dark and moist, they would be all the better from being sown absolutely on the surface. Every one familiar with forest growth must have noticed how forest tree seeds, which simply fall to the earth and are covered by the few leaves or the remains of grasses, germinate without difficulty. In cherry trees, especially, the stones, which have fallen from the tree, lying on the surface all winter, sprout and grow rapidly when spring time comes, and yet cherry seeds from the same tree, collected by the seed sower, sown in the way in which seeds are usually sown, frequently fail to grow. In order to have seeds as near the surface as possible, and yet protected against drying up, the

great prince of American practical gardeners,—the late Peter Henderson,—recommended for planting vegetable seeds, that the garden line should first be stretched along in the direction where the vegetables were to grow, sprinkle the seeds along the line entirely on the surface, and then simply tramp them in the ground along the line. In this way no garden seed ever failed to grow if it were good, and garden seeds are generally good, for it has been found that even old seed, if guarded against extreme heat or moisture, will continue to preserve its vital power for a definite period. Still every purchaser desires to get seed as fresh as possible. If the suggestions given are borne in mind, there will be very seldom complaints about the failure of garden seeds to grow.—Meehans' Monthly.

**TOMATO GROWING.**—A writer in American Gardening says:—Much of the success with the Tomato plants depends upon their not getting stunted in the hot-bed or greenhouse before transplanting. Too low a temperature, too scanty supply of water or getting rootbound may do this. If this happens the plants are later in coming to bearing, and also there is a considerable difference in the total yield. Too high a temperature is not as bad unless it scorches the leaves badly, but it makes the plants long legged and liable to be broken down by the wind or by their weight of fruit. If the plants cannot be set into the open ground before they begin to get rootbound take up a part of them and put them in boxes down cellar, where they will keep a week

or more very well, and that will give room for the others to grow.

**WINTER CARE OF BULBS.**—Where cannas, dahlias, gladioli and other summer flowering bulbs are stored in ordinary cellars they require careful examination from time to time. If the storage place is dry and warm the bulbs have to be sprinkled with lukewarm water when required to prevent their shriveling; if it is damp and cool there is danger of their rotting; and in a damp and warm place they are apt to sprout too soon. As in most cellars the temperature varies considerably in various parts it is generally not difficult to change the bulbs to a more favorable position if so desired.