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VICTOR VERDIER.

An old and well known rose ; has fine lustrous foliage and an abundance of bloom.
A beautiful and very desirable rose.

THE
Canadian Horticulturist
VOL XVIII. 1895. No. 1.

VICTOR VERDIER ROSE.

OF the Hybrid Remontant Roses, perhaps none excel the Victor Verdier for its flowering habits. It is probably on this account that this rose has been so much used as parent stock from which to originate varieties, no other being more used for this purpose, unless it be the Jules Margottin and the well-known favorite, General Jacqueminot. It lacks however, one very important characteristic of a good rose, namely, fragrance: besides this, the plant is not as hardy as the other hybrid remontants, and it is only a moderate grower.

The Victor Verdier was originated in Lyons, France, by the celebrated rosarian, Lacharme, who introduced it to the public in 1852. The same person has also the honor of originating the well-known favorites, Alfred Colomb, Charles Lefebvre, Coquette des Blanches, Anna de Diesbach, and others, all fine roses.

The subject of our sketch was probably originated from one of the La Reine type, crossed with the Bourbon type. Among its descendants, which are classed together as belonging to the Victor Verdier type, are Pride of Waltham, Charles Verdier, and many others.

H. B. Ellwanger, describes this rose as follows: Bright rose with carmine centre, a very fresh shade, but not permanent; semi-globular in form, of good size; not fragrant; very free; wood is all but smooth; foliage lustrous.

Mr. T. H. Race, Seaforth, writes as follows concerning this rose: I have grown the Victor Verdier rose for several years. In color, form and fragrance

it is one of the loveliest roses of its class. But it hasn't constitution enough for general cultivation in our latitudes, though it is described as perfectly hardy in the catalogues. To get wood enough is my greatest trouble with it. Its foliage is a rich dark green and its new wood is very tender; with me it requires careful winter protection and is very liable to succumb to the hard spring frosts and sunny days after it has been uncovered. The seedling from it, known as the Climbing Victor Verdier, is a stronger grower and a hardier plant, though the bloom of the latter is not so lovely in its form as the parent rose. In brief, the Victor Verdier is too tender a rose for general cultivation further north than Maplehurst or Hamilton.

SMALL FRUITS ON NEW FARMS.

Most persons, who acquire land in the newly-settled portions of the West and South, delay taking steps to secure a supply of fruit till they are in a condition to set out apple, pear, peach and cherry trees. The cost of erecting buildings and fences and making other improvements is generally so great that they have no money to expend in fruit trees for several years When they have obtained them and set them out, they must wait other years before they have attained a size to produce fruit. Then quite likely they may find, to their sorrow, that the varieties they have obtained are not adapted to their locality. There are many reasons why persons who take up new land should commence with berry bushes and vines rather than with trees, if their object be the supplying of their own tables with fruit. Strawberry plants come into bearing the year after they are set out, while gooseberry, currant, raspberry and blackberry bushes will produce good crops in two years from the time they are planted, provided they receive suitable attention.

The cost of cuttings of grapes, currants, and gooseberries is very small, they can be sent through the mails at cheap rates, and they are easily rooted by cutting them in suitable lengths and setting them in a trench that can be made by simply forcing a spade into the soil. All except one or two of the upper buds should be covered with soil, which should be crowded close to them with the foot. In mid-summer it is best to give them a partial shade. This may be done by means of a fence board fastened to supports on the south or east side of the row. The board should stand about two inches fram the ground, and four inches from the cuttings. If the soil is rich, is kept free from weeds and grass and is covered with mulch, the rooted cuttings can be transplanted the following year. Cuttings obtained in the fall may be kept over the winter by placing then in the cellar or by burying them in the ground deep enough to protect them from the frost.—American Agriculturist

THE BRILLIANT GRAPE.

BY the kindness of Mr T. V. Munson, we are able to give our readers a representation of one of the most promising of his many new hybrid grapes, the Brilliant. This cut is from a life-size photograph. Mr. Munson describes it as follows: "This is a seedling of Lindley crossed by Delaware; produced by me in 1883. This vine is healthy, vigorous and hardy, having endured the winters of New York and Ohio with impunity. It ripens just before the Delaware, is very prolific, berries and clusters as large as Concord, compact, translucent red, similar to Delaware; quality about the same as Delaware, with less pulp, seeds one to three, skin thin and tough, berries adhere firmly to peduncle, making it a splendid early market grape, suitable for long shipments, and it will command the highest price It makes a fine white or amber wine. It has been tested in Florida, Georgia, New Jersey, New York, Ohio, Kentucky, Missouri, Texas, Colorado and Connecticut. It mildews some in wet seasons in New Jersey and Michigan, near large bodies of water."

Mr. Munson, in sending the engraving at our request, says farther: "The Brilliant ought to be a great grape in Canada. It is larger in bunch and berry by double than Moyer, better in quality, more than twice as heavy a bearer. The vine is much stronger, and seemingly just as hardy. It is perhaps a few days later, and clings to the cluster much better. The flowers are perfect, while in Moyer they are practically pistillate, and must have erect stamened varieties flowering at the same time, standing near them to give a fair crop.

Market Gardening.—This is a laborious occupation, yet one that pays a very handsome percentage on the investment. Ten acres in vegetables, well cultivated and properly managed, will prove more profitable than a fifty-acre farm producing the ordinary farm crops. We have frequently observed a vast difference in the accumulation of means between the ordinary farmer and the gardener. The one will commence under very favorable prospects, on a farm leased for a series of years, will labor industriously and study economy, and rarely realize more than a comfortable living for his family. The other, commencing under less favorable circumstances, with equal energy, does not only pay an annual rent of from thirty to sixty dollars per acre, and support a large family, but in a very few years realizes sufficient to purchase the place. A few heads of cabbage will, in frequent seasons, sell for as much as a bushel of corn, and a few bunches of early asparagus for as much as a bushel of wheat. Good vegetables will always sell at a good profit, and our hungry cities can rarely be overstocked with them.—Prairie Farmer.

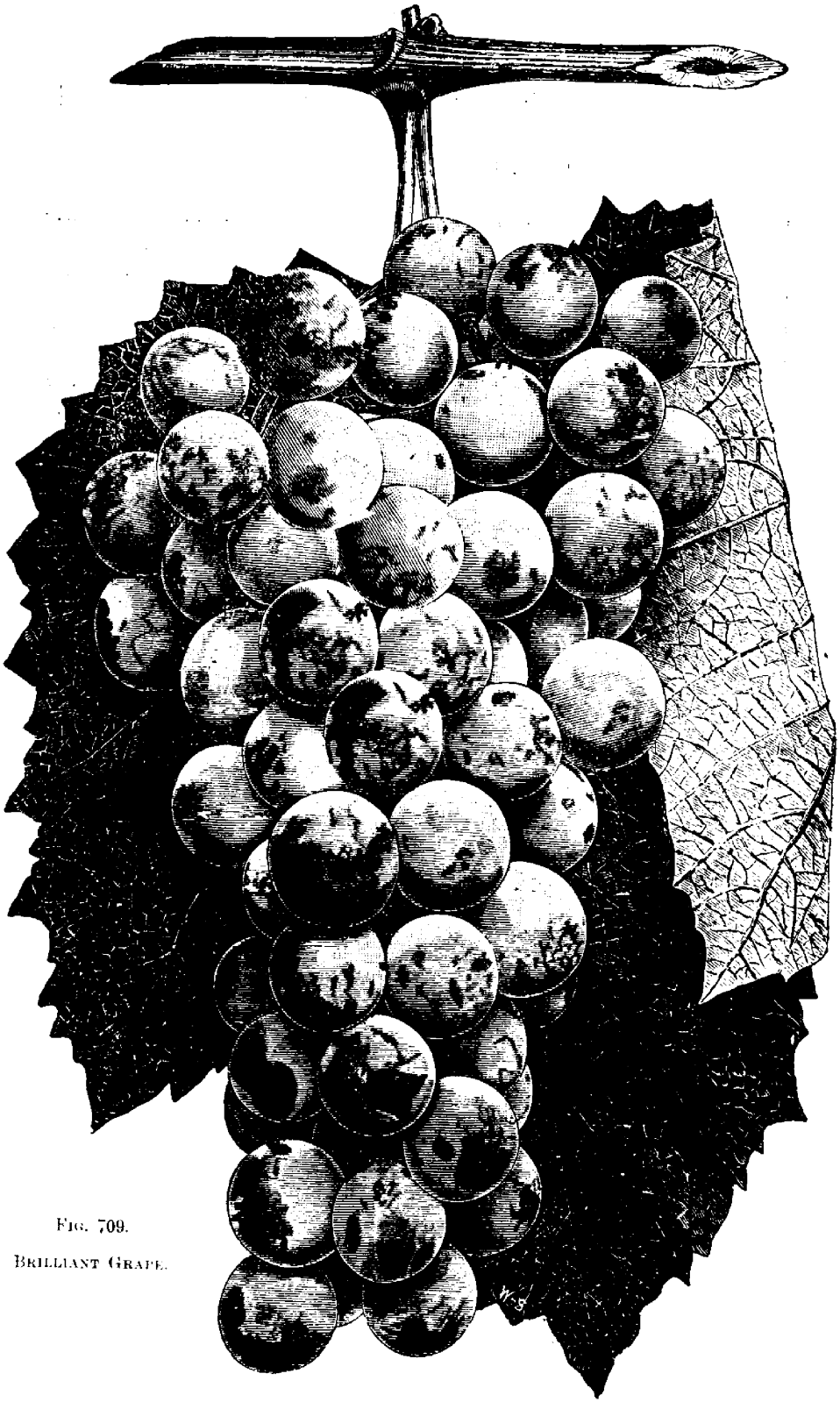
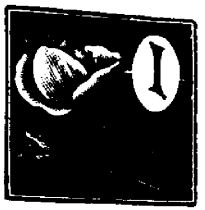


Fig. 709.

Brilliant Grape.

CO-OPERATIVE APPLE-GROWING.



I ADVOCATE the extension to apple growing of the principle of co-operation, which has already been found of so great advantage in other branches, and more especially, so far as farmers are concerned, in the matter of cheese making. This co operation may be on a small or a large scale. It may be only the friendly union of two or three farmers in a neighborhood, or it may include a township or a whole county, and it may apply to those who have only small orchards as well as, or perhaps even better than, to those who have large ones, for the latter are generally better able to take care of themselves.

1. Co-operation may well begin with the gaining of knowledge on the subject. The two or three may make it a point to compare notes or exchange ideas and information, and the larger body may hold meetings and secure the presence of those who are able to impart instruction, with regard to the kinds of apples to grow, the best modes of growing them, and the best modes of disposing of them.

2. As a second step, co-operation in buying trees for planting will secure the advantage, not only of lower prices by ordering in larger quantities, but also of greater attention to the order, the prevention of the petty frauds of the "tree-peddler," and greater satisfaction in every way. If I want 50 trees and two of my neighbors want 25 each, each of us will gain by sending in an order for 100 trees at the lower rates that are offered for that quantity. This is an obvious and immediate advantage affecting the pocket, and is one that is within the reach of a small number who may choose to unite, as well as of a larger number.

3. When the orchard is in bearing there may with advantage be co-operation in such a matter as spraying, where the size of the individual orchard does not seem to warrant the providing by each one of a proper spraying pump. Two or three farmers in a neighborhood may purchase a pump and provide the materials between them, or a larger number may arrange with a man who owns an outfit to make a round of their neighborhood at the proper time. Many a farmer neglects to spray his orchard, because he thinks it hardly worth while to get a pump for himself, or because at a busy time he does not want to be bothered with something that he knows very little about.

4. When the apples come to be picked and marketed, there is not only a fresh advantage to be gained from co-operation in marketing them, but there is a summing up of all the advantages already gained, the test and realization of the work of the earlier years. The knowledge and information gained, the prudent selection of varieties suitable for the market, the care in training the trees from the first year upward, the spraying, the tilling and manuring of the ground, are all telling upon the crop produced. If the kinds of apples have

been carefully and judiciously selected to begin with, the co-operating neighborhood will become known for certain good varieties of shipping apples. If the trees and the ground have been properly cared for and the trees have been properly sprayed, it will also become known for the quality of the fruit produced. Buyers will be attracted to such a neighborhood, and if an immediate sale be made to them, better prices will be obtained on account of the uniformity and quality of the fruit, and that without any combination to keep up prices. Or, if a shipment to the English or other market be determined upon, the advantage of co-operation becomes even more apparent The man who has only an acre or two of orchard has not a sufficient quantity to ship by himself. By uniting their forces, two or three or a larger number, may make up a carload or a larger quantity, and thus secure the advantage of the greatly reduced rates applicable to the larger shipment. Having a larger quantity, too, there is an advantage in dealing with the commission agent and the better knowledge of the market.

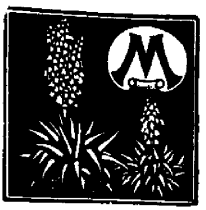
5. For windfalls and fallen fruit, co operation may secure a joint evaporator. This is a matter of great importance, not only to provide a proper means of disposing of this class of fruit, but also to avoid the unwise course of glutting the market with poor and decaying apples, which disappoint both seller and buyer. This evaporator may be either on a large scale in a town or village, or may be a smaller one for a smaller neighborhood.

To sum up, I recommend the formation of county societies to bring together all those who are interested in the subject at stated intervals, and to hold meetings for discussion and gathering information, and to work together as far as possible in the direction indicated. In addition to this, the apple growers in a locality, even if they be only few in number, ought to be in touch the one with the other and assist one another in such matters as spraying and the like, wherever necessary. My ideal would be to see 10, 20, or 50 farmers in a neighborhood meet together and form a "co-operative society," each one agreeing to plant, within the next five years, ten acres of orchard, the varieties to be few in number and all suited for shipment; to properly study and carry out the care of their trees, and when the time should come for fruit-bearing, to unite in sending their apples forward under their own brand to the English market, having their evaporator for the windfalls, and, if necessary, their central frost and heat-proof storehouse at the central shipping point.

Peterboro', Ont. E. B. EDWARDS.

Planting Cherry Trees.—Prof. Budd, of the Iowa Experiment Station, says that a cherry or plum orchard does best when planted thickly in rows running north and south, and giving a wider space between the rows to admit the sun and allow free circulation of air. Orchards where the rows were 24 feet apart, and the trees 10 feet apart in the rows, have done better than those planted in the usual way.

SUBSTANCES WHICH GIVE MANURE ITS VALUE.



MANURE, without doubt, was the first fertilizer employed in a general and systematic manner by the tillers of the soil. Its use dates back to the beginning of regularly organized cultivation of the soil. The constant and rational use of this fertilizer is evidence of the effectiveness which is universally conceded to it and of the beneficial influence which it exercises on the physical and chemical properties of the majority of soils. Manure is, in fact, what might be termed a perfect fertilizer—it is at the same time organic and mineral; it contains nitrogen, phosphates, potash, and lime; its organic matter decomposes readily; its physical character promotes aëration of the soil, rendering it more porous, and facilitating the respiration of the roots and the nitrification of the nitrogenous materials which nourish plants; finally, manure is a fertilizer which repairs the losses of humus substances from the soil. It has long been maintained that these substances are unavailable to plants in their original state, and that time must be allowed for their decomposition and transformation into soluble products, but experiments conducted by Petermann at the Agronomic Institute of Gembloux, Belgium, have shown that these substances just as they exist in the soil are capable of being dialyzed through membranes and are therefore assimilable by plants, at least by certain species of plants.

In extended studies of the composition of straw the author discovered a very carbonaceous substance which Dehérain has named decomposable vasculose. This substance appears in the manure in large proportions, and, as is explained further on, one benefit derived from the application of manure to the soil is the restoration of this carbonaceous principle which is exhausted by growing certain plants. It is therefore desirable to so conduct the preparation of the manure that those fermentations are promoted, which will give, even at the loss of a small amount of nitrogen, a fertilizer containing in a free state a large quantity of black substance (*matière noire*). It should be mentioned, however, that many agriculturists do not adopt this idea and look upon manure principally as a means of returning to the soil the nitrogenous and mineral matters removed by crops. These authorities are, therefore, especially concerned to prevent the loss of these substances by various means which arrest or prevent unusual fermentation of the manure and as a consequence the formation of black substance.

In the following table we calculate from these figures the quantities of fertilizing materials contained in the solid and liquid excreta discharged per head yearly by the principal kinds of farm animals:

Fertilizing Constituents in the Feces Discharged per Head Yearly by Different Kinds of Animals.

	Nitrogen.	Phosphoric Acid.	Potash.
	Kg.	Kg.	Kg.
Horses	56.80	21.70	19.60
Cows	77.40	11.80	48.80
Sheep	3.81	2.54	6.50
Pigs	5.40	4.08	.....

Animal excrement, therefore, furnishes to the manure a large quantity of useful elements and contributes much to to its value, but it is not restricted to this *rôle*. The urine retained by the litter supplies the moisture and alkalinity indispensable to fermentation, while in the solid excrement are added, as we shall see below, the organisms necessary to the partial destruction and fermentation of the litter.

Below is given the percentage composition of wheat straw and oat straw determined by the method of analysis referred to above :

Composition of Wheat Straw and Oat Straw.

	Wheat.	Oats.
	Per cent.	Per cent.
Water	10.40	8.05
Nitrogenous matter	2.42	3.57
Substances soluble in ether (fatty substances and chlorophyll)	1.18	2.98
Substances soluble in water, ashes deducted (reducing and non-reducing principles—gums, tannins)	3.37	5.70
Cellulose	33.60	27.15
Vasculose	24.00	14.20
Straw gum (calculated as xylose)	19.71	27.70
Ashes	6.34	9.85
	101.02	99.20

Use of Manure.

As regards the use and efficiency of manure in the soil, we have to distinguish two cases, application to strong soils and application to light soils. Manure generally produces little result in strong soils. On such it is best to use it in the fresh and unrotted condition. In this condition it acts not only by the elements which it supplies, but also by rendering the soil more porous and lighter, and in facilitating aëration of the soil which results in an increased oxidation of the nitrogenous substances contained in the manure, and in their transformation into nitrates so useful to plants. Sometimes the results obtained

in culture without manure on strong soils are quite remunerative. A celebrated example is the experiment of Lawes and Gilbert, at Rothamsted in which wheat has been grown without manure with good returns during thirty-two consecutive years. In similar experiments with barley carried on for twenty consecutive years (1852-1871), on the same soil, the yield was not sensibly reduced. Recently Pagnoul, at the Agronomic Station of Arras, has made a similar observation with sugar beets, which he has cultivated on strong soil for ten consecutive years without manure.

In light soils, on the other hand, manure is able to produce its full effect. The highest efficiency of this fertilizer depends upon a number of factors, fertility of the soil, kind of plants cultivated, etc. The results obtained on different soils will therefore vary widely. Dehérain, in field experiments at Grignon, on moderately light soil, obtained good yields of oats and potatoes during five consecutive years without manure. A. Girard, on the contrary, considerably increased the yield of a special variety of potatoes (Richter Imperator) by heavy manuring. For certain plants, such as corn grown for fodder, and sugar beets, all agriculturists agree as to the good effect produced by manure. These plants, in fact, readily avail themselves of the organic matter with which manure is charged.

It has been pointed out above that manure acts in the soil through the mineral and organic materials which it supplies, and through the physical changes which it brings about in the soil. The latter allow the nitrifying ferments to exercise their function under favorable circumstances, and to gradually transform the nitrogenous matter of the soil and of the fertilizers into nitrites. Nitrates are especially needed about plants, and are very easily assimilated. Aside from the solubility of the black substance, of which we have already spoken, this nitrification is the principal cause of the efficiency of manure; and since this phenomenon goes on in a much more complete and rapid manner in light soils than in strong, it follows that the latter will profit less by applications of manure.—A. HEBERT, Expert Station, Grignon, France.

Pruning in Winter.—Hardy varieties of the apple may be moderately pruned in winter, but there should be very few large wounds. These wounds should be covered with a composition that will entirely exclude rain, which may be applied after the outside of the wounds have become entirely dry, and it is especially important that the weather be excluded before the advent of another summer. After trying several substances, we find white-lead paint as good as any and more readily procured in almost any painter's shop, or in small cans at hardware stores. Applying grafting wax, formerly recommended, is more difficult. Pine tar, with brick dust intermixed, is also good. Caution is needed and it is better to prune too little than too much.

PEACHES: THINNING AND PACKING.

THE peach industry is an important one in many parts of our Province, especially when the yellows does not exist. Peach growers will be interested in reading Bulletin 74 of the Cornell Experiment Station We quote here that portion referring to thinning and packing, two important features, the one for producing fine large samples, and the other for placing them before buyers in the most attractive manner.

Thinning the fruit.—There is almost universal neglect in thinning the fruit in this State. Every peach grower knows that good fruit cannot be grown upon overloaded trees, and yet he refuses to thin and forthwith blames the market! It should be a rule that no two peaches should stand closer together than five inches of one another. No work of the orchard pays better than this thinning of the fruit, either in the price which the remaining produce brings in the market, or in the vital energy which is saved to the tree. Peach trees which are regularly thinned should bear every year, barring injuries from winter or spring frosts. Growers seem to forget that this fruit must all be picked sooner or later, and that the work is more easily done in June or July than in September. The thinning should be delayed until the fruit is the size of the end of one's thumb, for by this time the "June drop" has occurred, and the peaches can be readily seen and handled.

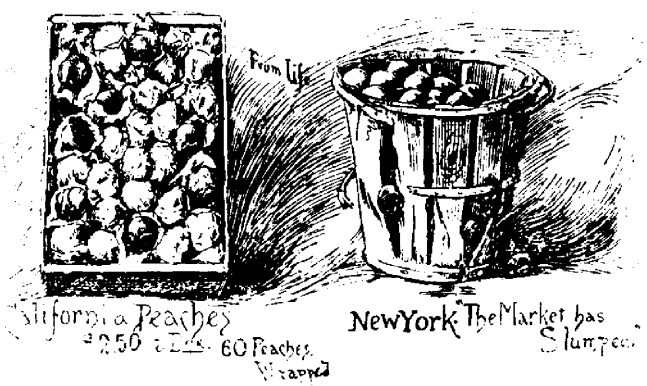


FIG. 710.

Marketing the fruit.—But if growers are negligent in thinning the fruit, they are too often positively careless in marketing it. Even in this year of low prices, fancily or nicely packed fruit has brought good prices, wholly independent of its quality. The handsome boxes of California peaches, containing 60 wrapped fruits, have sold from $2.00 to $4.00, and yet they are generally very inferior in quality when they reach our markets. Alongside these peaches,

shipped several thousand miles, our peaches have sold for 25 cents to 75 cents a half bushel.

There are several faults with our method of handling peaches. The packages are too large. The fruit is not graded and selected, in fact, it is not well grown. There are often no wooden covers on the baskets, and, as a consequence, that part of the package which should look the best, is, usually, most jammed and crushed. In observing the markets this summer, I found that quite half the packages were not full when they reached the salesman, and the peaches comprising the two or three top layers had chased each other around the basket until they were scarcely recognizable. The peaches had evidently been dumped into the basket, and they settled as soon as placed upon the cars. Our method of handling peaches is the very best advertisement of the handsome Pacific coast fruit. In that fruit, every individual peach in sound and perfect; in eastern fruit, the peaches often run through the package and are sold in the liquid state!

Wintering Vegetables.—Where did you get such delicious turnips at this time of year? Were they from the South? Now we will just let you into a little secret, providing you will promise to tell every one about it. Last Fall, when it was time to put away our vegetables for Winter, not having a cold cellar, we sank some barrels in the garden near the house, first taking out both heads; the rims were six inches above the level, and the earth raised up to the tops, in order to carry off the water. In these barrels we put our turnips, carrots, beets, parsnips, salsify, and last, though not least, our cauliflowers. The latter were put in a barrel about the first of December, the heads were just forming, and not more than two inches in diameter; these kept right on growing until the last was eaten, which was about the middle of February. The other vegetables at this writing, March 7, are as fresh as when put away. We filled the barrels but half way up, and did not put any soil with them, the roots lay on the moist earth, where they kept just above the freezing point by the warmth that came from below. The only covering they had was a butter tub that we put in the top of each; these fitted closely to the barrel, and kept the frost out perfectly. On but two nights was further protection given, then the mercury fell to nearly zero, and we threw a piece of old carpet over each barrel.—Amer. Gardening.

To Keep Apples late into spring or early summer, pack them in oats that are free from moisture, not allowing any apple to touch another. This is an excellent plan to keep a family supply for use until new apples come. If wrapped in paper the apples will keep all the better. The oats are equally as good for use after the apples are taken out as at first. For the longest keeping apples, select those grown on high clay land; lowland apples will not keep so well, although they usually sell better in market.

NOTES ON APPLE ORCHARD CULTIVATION.

AY I take the liberty of asking you to insert in your very interesting monthly a few notes relative to the cultivation of an apple orchard. I have been more or less interested in apple trees for quite a number of years. Four years ago I decided to take a more active part, and, turning my attention to this branch of culture, became an apprentice-horticulturist. I have set about 500 trees, consisting principally of the leading varieties known in this section of the country, such as Duchess, Wealthy, Fameuse, St. Lawrence, Canada Baldwin, Golden Russet, etc., which are all doing well.

Like everyone imbued with the desire to make a success of a new enterprise, I began to study the art of making apple trees grow, and, what is still better, bear fruit, adopting the practice to which others attributed their success. In every line of business there are always things which crop out, of which one does not think at first : this has been my experience, anyway, as far as horticulture is concerned.

It is now established, and on very sound principles, that a young orchard should be kept under cultivation, and that consequently the raising of vegetables and roots should be what the young orchardist should put his hands to. But when one is located quite a few miles from a marketing place for garden products and has hardly any stock to feed, the culture of roots, such as carrots, beets and turnips, is not by any means a paying business.

One must then have recourse to the culture of potatoes and corn, which pays very well when properly done, but the work involved by the culture of from seven to eight acres of potatoes and corn is indeed considerable, and impracticable in a good many cases on account of the scarcity of hands, or great cost of fertilizers needed. This is the obstacle which presented itself to me, and I thought of sowing about four acres or so of my orchard in cereals. I consulted many works on horticulture in order to ascertain what would be the best grains to try, but, unfortunately, I could not get any information on the subject. Accordingly, having to decide for myself, I chose peas and oats, sown together as a mixture, for the simple reasons that peas greatly improve the soil, and oats need much less nutritive elements than wheat or barley.

This first trial I made two years ago. The crop was a very good one, but as soon as the field was rid of the grain I noticed that the bark of some of the trees had been slightly gnawed by something, but what this something was, was the next question to be solved. The damage done to the trees was so small that a very superficial examination led me to believe that perhaps crickets had tried to feast on what I prized so much. Last year, however, I tried peas and oats a second time, but in another part of the orchard. The first part of the

season having been very wet, the peas grew very thick and tall. but they soon had to give place to the oats when the dry weather set in.

The result was more pea straw than bushels of peas. But in falling thus to the ground, the pea stalks formed a grand playground and an excellent feasting field for the mice and the moles, and, to my satisfaction as well as to my loss, I found out that the accused crickets had been transformed into these devastating little animals. Nine of my most healthy trees had the barks badly eaten up and the marks of the teeth were plainly visible. I then applied to them all the best remedy known to me in such a case, viz., a coating of fresh cow dung on the bark of the trunks. Four of them will, however, very probably die.

I am now a firmer believer than ever in evolution, and to those who may feel unable to keep all their young orchard under cultivation with vegetables, roots and corn, I would advise to sow other cereals than peas and oats.

Ottawa.

N. J. GIROUX.

Improved Brace for Wire Fences.—One trouble with wire fences is the liability of the wires to become loose, sagging down or losing their tension. This is mainly caused by the posts tipping or leaning towards the point of the greatest strain, and which is not fully overcome by the common plan of of placing a brace against the tod end of the post, the other end being imbedded in the ground. This lower end is subject to the action of frost, decay, and the liability of the stone or other substance against which it rests, to become displaced. By the plan shown herewith this trouble is obviated, and a firm anchorage secured. The two end posts are connected at the top by a strip or pole *a*, two two by three-inch strips *m m* are nailed in the form of an X to the top and bottom of the posts ; they are also firmly connected together at the centre by bolts or spikes. This plan answers equally well for ends of fences or the centre of a long line. In the latter case it equalizes the strain from both directions.—American Agriculturist.

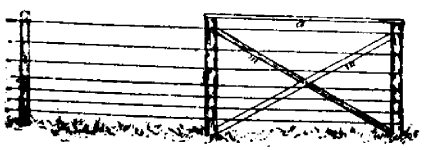


FIG. 711.

Feeding Apple Pomace.—I have always fed apple pomace from my cider mill to my cows, giving them from a peck to a half bushel each daily They are very fond of it, and it materially increases the flow of milk. I believe it is an excellent food for them, taking care, of course, to use it perfectly sweet, before fermentation begins. I feed it to swine, oxen and young cattle at any time. All these animals seem very fond of it, and will come to the gate every morning to get their ration. I have never seen anything but good results from its use.—M. A. SMITH, in American Agriculturist.

IRRIGATION.

HE past dry season certainly leads us to the conclusion that Canadian fruit growers sadly need irrigation of some kind to guard against such failures as have resulted this season in many localities from drouth. Prof. Taft writes a rather interesting article in American Gardening upon the subject, throwing out possible ways of accomplishing the work. The difficulty, however, is that most of them would be too great expense for an ordinary fruit grower, who has already sufficient cost in labor and in baskets to cut down his profits to a very small amount. For instance, he recommends draining water in tanks, where no better means are at hand. We have tried this enough to feel discouraged with the results, unless for a small garden. His plan of distribution with hydrants might work, if water supply is convenient, This would consist in running the water in pipes that will stand a slight pressure, such as iron or cement, to hydrants located at intervals of perhaps two hundred feet, and then with one hundred feet of fire-engine hose, which can often be purchased cheaply at second hand, direct the water into the furrows or basins that have been made to receive it around each tree. For vegetables and fruits where furrows are used the same means of conveying the water from the pipes may be employed, and thus one hydrant will answer instead of a dozen or more small ones.

In another part of his article he condemns the practice of simply wetting the surface about trees with water, thus :—The mistake is often made of applying the water upon the surface, and it is made worse by the practice of giving each tree a pailful or so at a time and repeating it daily. One or even two pails of water thrown on the ground under a tree will at best only wet the soil to the depth of an inch or so, and as this does not carry it down to the roots little or no good will result; in fact it may lead to harm, as a crust will form, particularly upon a heavy soil, and not only will the water that has been applied quickly evaporate, but the loss of the water already in the soil will be hastened. If the application is frequently repeated it will result in making bad matters worse. Instead of applying five gallons every night for a week, had the same amount of water been applied at one time and the arrangements been such that it would soak in to the roots, the tree would have been amply supplied in all probability, and no further application would have been necessary for ten days or more.

Whenever possible we would recommend that pipes be laid in which the water can be conducted from the reservoir or tank to a convenient distributing point in the field. If only a small area is to be watered, say five acres, an iron two-inch pipe would answer, if a pressure of ten or fifteen pounds could be secured. With a larger area, or a light pressure, the supply pipe should be

enlarged, and then the galvanized sheet iron pipe with a lining of cement could be used. A four-inch pipe would suffice for twenty acres. For the market or truck garden some such arrangement would be almost a necessity as there the amount of water needed would be much larger than would be required for an orchard. In a dry season it would be desirable to apply at least one inch of water once in a week or ten days. This would require about 800 barrels of thirty-two gallons each. In most seasons two or three applications will be all that will be required, but in years when the drought is long continued as many as seven or eight may be necessary. When small orchards are remote from the water supply the interest on the cost of the piping might be more than the extra cost of hauling the water in tanks, especially as irrigation may not be necessary for our orchard crops for two years in succession.

A HINT FOR PLANTING AN ORCHARD.

Measure off, as to number of trees. See how many rows each way are required. Then plow in lands of the same width the rows are to stand apart, so that each dead furrow running north and south, will come in the proper place for a row of trees. When each land is plowed, set the plow to run as deep as possible, and go another round in each dead furrow; with a steady team and by taking pains, this last round will leave furrow straight. Then measure off crosswise, set 3 or 4 sight stakes and run a light furrow for each row east and west The ground can thus be prepared with one-tenth the usual labor.

Use best surface soil for filling in; work it carefully among the roots. Never let pure manure come in contact with roots—place on the surface. As soon as their has been soil enough put in to somewhat cover the roots, pull tree gently up and down, causing the earth to jolt into every little hole and cranny, then fill in earth, pounding it down tightly as you fill it in, not waiting until it is all in. The great secret is to guard against leaving air spaces around the roots or under the prongs, and to pound and press the soil as firmly as in setting a post, taking care not to bruise roots. When filled up level tread or pound the soil around and towards the tree as hard as possible; then put several inches of loose soil over the tramped surface to prevent baking, etc. If planted as directed, staking will never be required, and your tree will live and grow during the dryest season.—Nurseries and Orchards.

Provided all other elements of good culture are cared for, it is almost impossible to give fruit trees too much manure. Much of the trouble with fruit trees comes from their being half starved. Pear and apple trees require heavy applications of well-rotted manure, placed for yards wide around the trunk under the branches, though perhaps many think that such a dressing of manure would never pay. But we are speaking of the absolute health of the tree and productiveness in splendid fruit.—Hort. Times.

A SCALE FOR JUDGING FRUITS.

A Paper by the Secretary, before the Annual Meeting at Orillia, Dec., 1894.

ALREADY the Ontario Fruit Growers' Association has taken steps to secure greater uniformity and fairness in the judging of fruits at agricultural and horticultural exhibitions throughout Ontario. The fruit catalogue published annually in our Report, is referred to by intelligent judges for final appeal in disputes concerning the value of varieties, but, it is not, however, used as widely as it should be. Some judges make free use of it in judging their collections, while others pay no attention whatever to it and jump at hasty conclusions.

I think it most important that we should pursue this matter still further, until we are able to furnish every secretary of every agricultural and horticultural society with a score card for the use of their judges.

True, it requires a great deal more time to judge the fruit in this careful way, assigning to each variety its value on some systematic basis, than it does to merely jump at conclusions from the general appearance of the collections, but such careful work amply repays the time it occupies. As conducted at present, our fairs fail entirely in accomplishing the end for which they were intended. They do little or nothing in educating the public with regard to the real value of the varieties shown, or in directing planters concerning the most profitable or most useful kinds to plant for the various purposes. No doubt there are some judges who take into consideration more than merely the appearance of the collections, but, if they do base their decision on some sensible list of points, the public do not know what these are, and consequently are no wiser in this respect than they were before. Now if a score card with clearly defined points, showing every investigator the points taken into consideration in giving the decision, and showing the real value of each variety, as made up of the various points of merit which it possesses, the public would take great interest in reading these over and would soon become educated regarding the important points which guide the judges in estimating the value of varieties, and planters also who are about to plant orchards would be able to do this much more intelligently after having made a study of the exhibits at the various fairs.

I do not propose to give you a form for a score card that would be beyond criticism. I simply place before you two or three forms with the object of stirring up that careful discussion on this subject which it so well deserves, and hope that either in the open meeting, or by the aid of a committee, we will be able to procure such a score card as will secure the approval of this whole Asso-

ciation. These should then be printed in quantity and a sample of them sent out to the secretary of each agricultural and horticultural society in our Province.

I think it is important that not only the judges should use these, but also that the public should be fully acquainted with them, in order that the exhibits may be made with greater intelligence than they are at present.

Here is a sample of card proposed for judging single plates of apples :

Score Card for Plates of Apples and Pears.

	Value or Points.	Score.
Form	10	
Size	10	
Color	10	
Freedom from blemishes	20	
Uniformity	20	
Quality	30	
Perfection	100	

Then for judging collections of apples and pears, I presume quite a different form, perhaps this one, for a large general collection :

Score Card for Collection of Apples and Pears (General).

*Ten points as follows :—Form, 2; Size, 2; color, 2; freedom from blemishes, 2; uniformity, 2.

VARIETY.	*Value of Sample.	Catalogue Value of Variety.	Total Points.
Baldwin	5	22	27
To sum of total points add maximum of 10 for covering season.			

On this card, the list of the varieties may be entered, the value of the sample showed, and the absolute value of the variety as shown in our apple or pear catalogue as the case may be. The sum of these will be the number of points gained by the variety in the collection, and the sum of these will be the total value of the collection.

Thus, the value of the sample of Baldwin shown may be only five out of a total of ten possible points, the absolute value of the variety as shown in our report is twenty-two, and adding these together we have twenty-seven as the total value of this variety in the collection.

I have made ten the maximum in this case, rather than one hundred, for

the sake of simplicity. On a large collection it will be best to just keep in mind the relative value of the points, and to work out the value of each sample mentally on that basis.

For a collection of varieties for dessert purposes a somewhat different card should be used. Thus:

Score Card for Collection of Apples and Pears (Dessert).

*10 points as follows:—Form, 2; size, 1; color, 2; clearness, 3; uniformity 2.

VARIETY.	*Value of Sample.	Catalogue Value of Variety.	Total Points.
Baldwin	5	2	7
To sum total of points add maximum of ten for covering the season.			

And for cooking the following will be adopted:

Score Card for Collection of Apples and Pears (Cooking).

*10 points as follows:—Perfection of form, 1; size, 4; color, 1; uniformity, 2; freedom from blemishes, 2.

VARIETY.	*Value of sample.	Catalogue value of variety.	Tota Points.
Baldwin	5	5	10
Add maximum of 10 for covering season.			

In these two last forms, instead of taking the total value as given in our catalogue, the value there given for dessert or cooking should be used respectively. Thus the sample of Baldwin which, for lack of color, lack of uniformity and for blemishes, only has a value of five, gets two additional points only as a dessert apple; while for a cooking apple the Baldwin is worth five marks, making the value of this variety in the collection for cooking, ten.

For judging grapes, of course, quite a different set of points must be observed from those used in judging apples and pears. I would propose for single plates—

Score Card for Plates of Grapes.

	Value of Points.	Score.
Flavor	30	
Form of bunch	10	
Size of bunch	15	
Size of berry	15	
Color	10	
Firmness	5	
Bloom	5	
Freedom from blemishes	10	
Perfection	100	

Score Card for Collection of Grapes.

* 10 points as follows :—Flavor, 3 ; form of bunch, 1 ; size of bunch, 1½ ; size of berry, 1½ ; color, 1 ; firmness, ½ ; bloom, ½ ; freedom from blemishes, 1.

VARIETY.	Value of Sample*	Catalogue value of Variety.	Total Points.
Concord	8	21	29
Delaware	6	26	32
Lindley	5	28	33
Niagara	9	22	31
Pearl	8	4	12
			117
Add maximum of ten for covering season.			6
Value of the five.			123

As such a manner of judging fruits would entail a great deal more labor than the plan now adopted, I suggest that only one judge be appointed in each section, instead of three as at present, and that this one judge be an expert, and one who has the confidence of the exhibitors as well as of the authorities. Further, I recommend that this judge should be allowed the amount now paid to the three. In this way there would be sufficient compensation for the work done, and better work would therefore be secured. One judge would work almost as fast as three, and, if properly paid for his time, could afford to do the work well.

A committee was appointed by the meeting at Orillia, to consider this subject, and report. The committee recommended the adoption of the Score Cards, with the amendment that in awarding the points for covering the season, in collections, the maximum be computed on a basis of five points for each variety shown in such collection, instead of allowing ten marks as a maximum in all cases.

The Massachusetts State Board of Agriculture has established a scale of

points for judging vegetables. Pamphlet forms, containing cuts and scale of points for two or three of the finest varieties of all the different vegetables, are being issued for the use of the Incorporated Agricultural Societies. This is one advance needed by all agricultural societies, as very often men are appointed to judge at shows who differ very widely in their ideal of a perfect specimen, and by having an authorized scale of points to guide them, much less unjust decision will often be given. As an example of their plan, we give scale of points given for "Beauty of Hebron" potatoes and tomatoes :—

Size—Should be 4½ inches long and 3½ inches wide for perfection—30 points

Form—Should be according to engraving as given in pamphlet—30 points.

Smoothness—Free from deep pits, warts, or excrescences—30 points.

Quality—Fresh appearances, freedom from coarseness, and bright color—10 points.

Total, 100 points.

The following is the scale of points for tomatoes :—

Form—Should be according to engraving—40 points.

Color—Should be bright red or purplish pink, according to variety—30 points.

Size—Should not be less than 2½ inches, and not more than 3½ inches in diameter—15 points.

Quality—Firmness, ripeness, and freedom from green spots or cracks—15 points.

Cultivation of Orchards.—In a bulletin lately issued by Prof. Bailey, it is stated, in relation to fertilizers, that potash is the chief element needed in the soil, particularly after trees come into bearing. This is usually supplied in the form of muriate of potash, of which some 500 pounds, or even more, may be used to the acre annually in mature orchards. Wood ashes is also an admirable source of potash, and 40 or 50 bushels of unleached ashes to the acre is a fair supply. Phosphoric acid is the element of next importance, and from 300 to 500 pounds of plain superphosphate may be applied annually to an acre. Preparations of bone, and, perhaps, the Thomas slag also, furnish phosphoric acid in available form. When lands are properly cropped, nitrogen can be obtained most cheaply for orchards by plowing under nitrogenous green manures. As nitrogen is a great promotor of growth, it should be used with some caution, for orchard trees are grown for fruit rather than for timber.—Garden and Forest.

Outlines of Fruit.—The Country Gentleman advises those who desire to take impressions of fruits, in order to procure correct outlines and distinct records of their size and shape, to cut the fruit exactly through the middle with a sharp, thin-bladed knife, let it dry half an hour or so, to evaporate the juice on the surface; then with a pen touch lightls the exterior of the face and stem with ink, and press it on unsized blotting paper, which will absorb the ink and make a perfect impression. Press every part well down. The moisture of the face will cause the ink to spread and make a soft shading.

HEATING WITH KEROSENE LAMPS.

A CORRESPONDENT of American Gardening has furnished that journal with the following plan and description of his greenhouse, heated with kerosene lamps, which is so concise and easily understood that all who desire can readily plan and heat a house on his system. In all respects the diagram faithfully represents one side of the original house on this system, and is drawn to a scale of one-quarter inch to one foot. The pipes are supported by the woodwork at the partition, and at three other points.

The boiler is attached to the pipes by two unions, as shown, and being very light and holding but little water, requires no other support. The shaded portion shows the space occupied by the water in the boiler. The boiler is shown in sections, its form being circular. Water is poured in at the "filler" shown. The expansion pipe is a safeguard against trouble from steam forming in the boiler, but in the original house that has never occurred and is not likely to.

Boiler is made of tin. By unscrewing the unions the water runs out and the boiler is taken off. It can, after drying, be painted inside by pouring in thin paint and rolling it about until the paint has touched every point. In this way the tin boiler has been preserved two years, and may last much longer, but copper would be better.

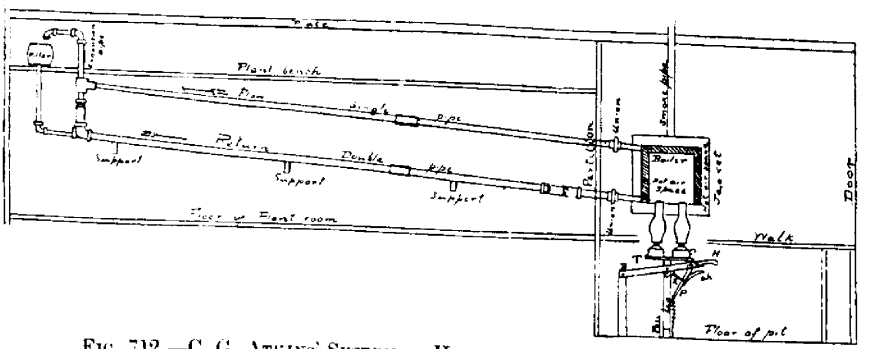


FIG. 712.—C. G. ATKINS' SYSTEM OF HEATING WITH KEROSENE LAMPS.

The "jacket" is, like the boiler, supported by the pipes. A short pipe is soldered into the boiler for the flow, and another for the return, and these reach out through the jacket and engage the unions.

The lamps stand on a table (T), which is just large enough to hold four lamps. The table has one leg under its center, which slides down into a hollow post, so that the lamps can be raised and lowered about six inches, great facilitating the work of caring for them. In the drawing the lamps are shown in

position for heating, and the table is kept up by the pawl (P) resting on the rack attached to the post. To lower the table and the lamps, grasp the handle (H), and with the forefinger reach down to the pawl handle (ph); disengage the pawl from the rack, and lower the table as far as desired. To raise it again simply lift on the handle (H); the rubber band (R) holds the pawl against the rack. The handle is pinned to the leg at C, and to a rear post at B, the rear post pinned at its foot (A). All the pins, A, B, C and D are loose, so that the parts will move freely.

FRUIT INSPECTION IN TORONTO.

THE subject of grading and inspection of fruit is a live one at present, and is being agitated in all our cities. A Toronto correspondent of the New York Fruit Trade Journal writes: "The fruit dealers and grocers of Toronto, Ont., have prepared a petition for presentation to the City Council, urging that body to secure legislation which will improve the methods of fruit packing along the following lines:—'That all fruits shall be graded when packed and plainly marked or branded 1st, 2nd and 3rd respectively; that all fruit baskets shall be of two sizes only, holding five quarts or ten quarts, and must contain said measure, strawberry and raspberry baskets alone excepted, which shall hold not less than one quart each; any fruit sold by weight shall have the net weight marked plainly on the package or basket; that all vegetables, except such as are sold by count, be sold by weight only; that any market inspector or fruit inspector, duly appointed by the council of any municipality, shall have power to and may examine any package, barrel or basket containing fruit or vegetables, and if he find the same to contain unsound fruit or vegetables, or fruit differing from the top layer, or inferior to the sample or class branded or marked thereon, he may confiscate the package, barrel or basket and its contents, and may, on a second offence, prosecute the offender or offenders.' The petitioners set forth that many fruit growers are careless in their packing and that the reputation of Toronto as the distributing centre for Ontario is injuriously affected in the English markets by the bad condition of fruit opened there, depressing prices and frequently spoiling the sale of several consignments."

All honest fruit growers will unite with us in seeking for any legislation that will tend to save the good name of our country from being degraded in foreign markets, but we question the wisdom of some of these restrictions. For example, a quart basket is too large for raspberries; pints would be better for such soft fruit. Again, why should all fruit baskets hold either five or ten quarts of fruit? The sixteen quart is most convenient for wine grapes, and the twelve quart for apples and pears. Surely it is enough to have the weight marked on the package, and let all fruit be sold by the pound, leaving sizes to be adapted to the fruit being handled.

A SUCCESSFUL FRUIT-RETARDING HOUSE.

AT the recent meeting of our Association at Orillia, an inquiry was made regarding the advisability of building cold storage warehouses for fruit; and whether they should be placed in the great market centres, or in the fruit-growing districts. The prevailing opinions seemed to favor the former, but possibly the latter would serve a good purpose if not too expensive.

The editor of this journal would be glad to receive descriptions and drawings of such buildings as have proved successful in other places, for publication. In the mean time we give place to the following from the pen of Mr. E. G. Fowler, in the American Agriculturist:

"Very much attention has of late years been given to cooling and refrigerating houses, designed to preserve fruit for a time, prolonging its season and avoiding the necessity for marketing it when the market already has a surplus. Quite a large number of these have been built in the Hudson River fruit region, but they have hardly been conspicuous successes. This is not due to any radical defect in the principle upon which they have been constructed, but rather to the fact that too much has been expected of them. As a rule, they have been especially disastrous with grapes, though in isolated cases they have been successful with this fruit, prolonging the season and realizing better prices for the grower. Mr. W. D. Barnes and his son and partner, Edwin, Orange County, N. Y., are very intelligent and progressive fruit growers. In the fall of 1883 they built a cooling house on what is known as the Gerald plan, which is practically the same as that so generally used by the dressed beef companies all over the country. The building, of which we give a diagram, is of brick 18x36 feet in dimensions. Inside the brick wall is a six-inch air space, then four inches of sawdust, the latter separated from the air space by a board partition, papered on both sides. The entrance (see Fig. 713) is at *a*, which leads into a hall *b*, from which we pass through the door *c* into the refrigerating room *d*. Figure 714 shows the second or ice story. For a hall *a* is directly over the lower hall.

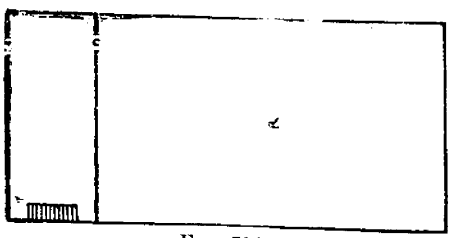


FIG. 713.

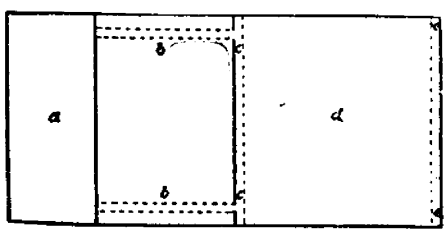


FIG. 714.

The large space *d* is the ice bin and the dotted lines *c c* and *e e* show openings in the floor. The parallel dotted lines *b b*, are two square box tubes for conveying warm air to the ice. The tubes pass through the floor at the lines *a*, pass on the floor to *c c*, when they turn upward at a right angle and empty the air directly on the store of ice. At *e e*, the partition for retaining the ice is slatted so that the air passes freely through it, dropping to the lower room. This method keeps the air in constant, but not rapid, motion. On the occasion of a recent visit to this cooler, it was being almost exclusively used for peaches. Messrs. Barnes & Son are large peach growers and they find the cooler of great benefit to them.

The peaches are picked in tray crates, such as are in common use among vineyardists in Western New York. They are very convenient, having slatted sides, thus affording an air circulation, and can be piled on the other as high as is desirable without injuring the fruit. When peaches are wanted, they are assorted, packed and shipped. The ripening of the peaches is retarded about a week or ten days, and it in no way impairs the quality of the fruit. A special

FIG. 715.

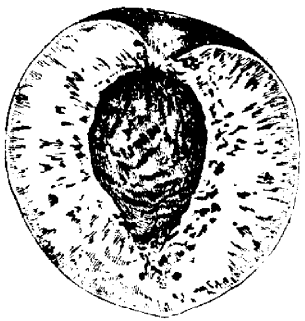


FIG. 716.

favorite is the Late Rose peach, and a walk in their peach orchard never fails to impress its value on the spectator. It is a very productive sort—it must be severely thinned if large, handsome fruit is desired. This they do, pulling off from one-half to three-quarters of the young fruit. The trees were heavily loaded, despite this severe thinning, with fruit of brilliant color and marvellous size. No stable manure is wanted in their peach orchards, they rely mainly on potash and phosphoric acid, which they find in wood ashes, kainit and ground bone. They prune differently from the methods in general use. Their trees are headed low in the beginning and they keep them so, cutting out large branches as freely as small ones, to accomplish their purpose. To grow high colored peaches is to get good prices, and to secure this color they use potash freely. An illustration is given of a bisected fruit, showing the comparative size of the stone, in Fig. 716, and in Fig. 715 one of an uncut specimen, both of which illustrations are a trifle under half the natural size. The fruit is white-fleshed, a perfect free stone, of high quality and a good seller."

NOTES ON VARIETIES TESTED.

The Williams' Strawberry.

I WISH to say after testing the above for ten years that I am safe in saying that there is no one strawberry as good for the general crop. It is large, handsome, a good shipper, very productive, and the quality is unsurpassed. As an old strawberry grower, I would advise all to drop such as the old Wilson, Crescent Seedling, Michel's Early, and many others, unless you are on a very early spot. But, remember those small strawberries are the means of making our market so low at times. If we all would aim to grow our berries better and to be more particular about the varieties we plant, we would get better prices and larger crops. The Williams plants can be had in many places at reasonable rates. It has a perfect bloom.

The Champion Peach.

A report on the above peach might not come amiss. The first year it came out I budded it on a four-year old tree. This year it had quite a few peaches of large size and of good quality. It is a white peach with a pale red tinge on one side, which gives it a rather rich appearance; but it rotted badly, which was quite a common thing among many peaches this year. But it has three bad points: It is a white flesh, ripens with the Early Crawfords, and it is not what you could call a freestone.

The Lovett White Peach.

The above fruited with me this year on a three-year old tree. If it does not do better as the tree gets older it will be of little use. It is a pure white peach; so far, small, of medium quality.

The Abundance Plum.

The above plum is worthy of a place in every orchard. It is a rampant grower, early and abundant bearer, of good quality and size, bears very young. It is said to be curculio proof, but this I cannot agree to; but so far I have not seen a single black knot on them. It is almost red, with a heavy bloom; ripens early, does best on heavy soil, but will grow where any other plum will grow.

The Wonderful Peach.

The above peach very much resembles the Smock, which has become very popular of late, but I think it is a little larger and of better quality. I had a five-year-old tree which they looked very fine on, but I had a limb on another tree which was some spotted, and some specimens cracked. It is a little tender in the nursery rows, but shows no signs of it as the tree gets older. It is worth trying; ripens with the Smock.

Niagara.

W. H. LEE.

TOMATO GROWING FOR PROFIT;

Being a Practical Treatise, showing in Detail how to Grow Tomatoes by New Methods, from the Saving of the Seed to the Marketing of the Crop, so as to leave, when sold, the Largest Amount of Profit to the Producer.

The whole being the result of over Thirty Years' Extensive Practical Experience by the Author,

S. H. MITCHELL, Gardener, Florist and Seedsman,

ST. MARY'S, ONTARIO, CANADA.

PREFACE.

There can be no doubt but that it becomes the duty of each individual who has made growing of some *special crop* the study and practical work of a lifetime, to contribute the knowledge he has thus obtained for the good of society as a whole; more particularly is this the case when the experience of the individual is directly opposite to the practice and directions given by others.

Being a practical man, I hold that the best proof of any system *is success*. Beginning the cultivation of tomatoes over thirty years ago, without any capital except my own labor (if that can be called capital), I have succeeded in making every tomato crop yield a fair profit But, during the last fifteen years, by putting in practice the system described in this treatise, they have been far more profitable. So that I can say without egotism, that out of the profits I have been able to lay by something for myself and family for a rainy day.

I do not aspire to literary talent, or claim that my sentences are all grammatical, but I have endeavored to make everything so plain that all can understand, and put my methods into practice.

The great aim of this work is to point out how to grow and sell a crop of tomatoes in such a manner that, after all expenses are deducted, the largest *profits possible* will be left for the grower.

Although the instructions given are chiefly for the market gardener, and others who wish to grow the crop for profit, yet it will be quite easy for the amateur or private gardener to adopt them to suit his smallest requirements.

I might have written a chapter on growing tomatoes in fancys, *e. g.*, by tying them to stakes; by growing them on hoops; by pruning them once a week, or oftener, in order to encourage a more thorough ripening of the fruit, but such a chapter would be foreign to the design of this work. Those who wish to grow tomatoes in fanciful ways, and spend three to five times as much labor on them as is necessary, and then receive only half a crop, are welcome to do so. A bushel of tomatoes grown in these fanciful ways, if time and expense are counted, usually cost as much as two or three bushels bought at market price.

My main object in this work is, not to teach profitless fanciful ways to those who have plenty of time and money to spend, but to clearly point out how the poor industrious man can support his family and lay by something for the future, by growing tomatoes.

S. H. M.

The Garden and Lawn.

FLORICULTURE AS A BUSINESS FOR WOMEN.*

THIS is quite in keeping with her capabilities and tastes. What more congenial occupation for women than caring for the beautiful plants and flowers which the Creator of all has made! Moving this one into the sunshine, picking off dead leaves from another, giving all a motherly care! Peering into the face of this little flower and wondering how such lovely hues can possibly evolve themselves from such a homely little plant! Women seem endowed with a flower-loving nature, and never are quite content unless when the proud possessor of the most beautiful plants that can be obtained. In these days of social progress new and broader fields are opening out for the employment of women, and they are not limited to the teaching profession, which has always been crowded—the fine arts, manufacture of artificial flowers, designing and making of bonnets and gowns, or, as a last resort, the more menial and heavy work. But now, as the years go on we see the women of our country taking up the professions. They are lawyers, doctors, and even candidates for municipal honors; they are installed as clerks in stores, typewriters, and bookkeepers; and are now beginning to take a place as professional florists. The business of floriculture is not crowded, and there is always room for bright, thorough going, flower-loving women to make it a success. A natural correct taste is one of the requirements, and in recognizing the beautiful in color and form, and, above all, the harmonious and artistic combinations of these, women excel, and so are unequalled as designers and decorators in this line.

There are some women to-day throughout the country doing a profitable business as florists, being themselves both growers and business managers.

*A paper read before our Association at Orillia, by Miss Hodges, a practical florist.

Though we often hear arguments to the contrary, we have in the ranks of women a large percentage as agile, clear headed and determined, and who might just as confidently expect success, as the men who are in business. This being the case, why may they not engage in a business so eminently suited to their refinement, taste and powers as the cultivation and commerce of plants, flowers and seeds?

An absolute necessity to success in the culture and disposal of plants—and without success there cannot even be pleasure—is a complete mastery of details, and this we assert, woman has pre-eminently—as is proven by her able management of the multitudinous duties which crowd each other in the daily routine of household work. Then to study the nature, habit, and all the conditions and requirements of the many genera of the flower world is a delightful exercise of the mind, and woman can delve into the minutiæ of the business with a zest that few men show.

A high standard of excellence is imperatively demanded by women, and where does the critic find a broader field for indulgence of discernment, comparison and taste? To be a florist should not be thought to be one whit less in importance than to be a dry-goods (or any other goods) merchant. The very nature of his calling should make him better, as intimate association with plants and flowers is in itself elevating. Many people associate with "florist" the idea of "gardener," a word which to them has meant a kind of "Jack of all trades," who looked after the cow, drove his master down town and back every day, attended the house furnace and took care of the greenhouse, kitchen and flower gardens in *his spare moments*, and was supposed to have vegetables and flowers ready for all occasions. Occasionally one would see this advertisement in the country papers: "Wanted—a gardener to look after the cow and horses, and make himself generally useful." But these are getting rare—like the Dodo bird, almost extinct.

A woman, to be a successful florist, must be on the alert for all the new and rare things in her line, and make specialties of plants which, after a fair test, she finds to be quick sellers and to give customers the best satisfaction. Again, patrons are of the most refined class of society, hence, in business associations, a florist mingles with people of taste and culture, which is one of the strongest proofs of the occupation being a suitable one for woman. In summing up briefly we find that women who wish to earn a livelihood may be successful florists. 1st. Because the business, from its nature and surroundings, is a suitable and elevating one for them. 2nd. Because they are naturally endowed with a plant-loving faculty, and to be successful one must have a congenial occupation. 3rd. Because they have the command over details necessary to the wants of so many and varied tender charges. 4th. Because when she has ventured into the, for so long to her, foreign realm of mercantile life, she has been found to be the peer of man, who so long has held the territory.

A TASTY WINDOW BOX.

ONE of the most satisfactory methods of adorning the inside of our houses is by the use of suitable plants, and this is an especially suitable season to remind our lady readers of that, when the winter season is not far off. The window offers a convenient spot for a box with choice plants, and will greatly assist the appearance of the room.

The beautiful box here shown is known as the "Minton tile window box," and is made in Minton tiles, decorated in yellow, blue and white, under a heavy glaze; substantial wooden mountings, natural dark finish; the interior is lined with zinc. The size is thirty-three inches long by nine inches wide and seven inches deep. The photograph was taken with plants in the box, and that helps to display its use. They are: one Dracæna indivisa, two Dracæna terminalis, two Anthericum vittatum var., two Cocos Weddeliana, two Asparagus tenuissimus, five Pellionia pulchra, the latter being the plant drooping down in front, and is extremely rich looking in contrast with the light colors of the box. This collection of plants, as is easily seen, makes an attractive box, and they are selected to withstand the temperature and peculiar atmospheric conditions of the ordinary living room, and would cost about $4. For a fancy box, such as the Minton tile, we would not advise very common or mean looking plants, they would be out of place, but it is not necessary that one should be without a

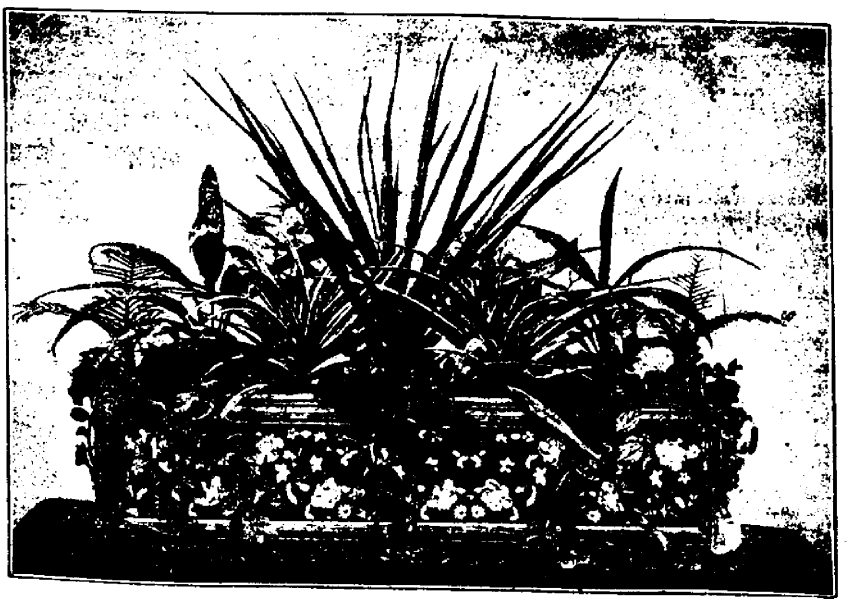


FIG. 717.—A CHARMING ARRANGEMENT FOR A WINDOW BOX.

window box if they cannot afford or do not care to invest so much money in one as this would cost—the price is about $5. With a saw, a hammer, a chisel, a few nails and lumber, a serviceable box can easily be made. Get one-inch planed pine boards, free from knots, and put them together so as to make a box of the same size as the one described; or any size in length and width to suit your window, and paint it any desired color. Bore six half-inch augur holes in the bottom at equal distances, and the box is ready for the plants. If it is desired to have it a little more fancy in style, procure half-inch black walnut trimmings and tack them at top, bottom and ends, so as to make it look like a panel. A splendid decoration is oil-cloth of a tile or other pattern, cut to size and fastened on with the black walnut trimmings. A few geraniums, heliotropes, sweet allyssum, begonias and tropæolums to droop over the edge, will give a pretty effect. Such plants will grow easily, and can be procured at very little cost. A dozen plants should be enough, and any florist can supply them. If you have no soil, it would be better to get that also from the man who furnishes the plants. To give the collection a rich appearance it would be well to have one palm for the centre of the box. The illustration is from a photograph kindly supplied by Messrs. P. Henderson & Co.—American Gardening.

HOW I GROW BEGONIA RUBRA.

Young plants bought in the spring or else propagated from cuttings will make nice flowering plants for the following winter. This begonia likes a light rich soil, and during the summer it should be placed in a half shady place out of doors, and never allowed to get dry. It throws up new roots from the root stock every year and these bear the flowers the following winter and spring. These shoots will increase in size in proportion to the age of the plant so that four-year old plants will often throw out shoots six and seven feet high and one inch and more in diameter. There ought to be only the growth of the last two years left on the plants. Shoots that were thrown up in previous years should be cut close to the base of the plants. The new shoots have a tendency to keep on growing like a bamboo without branching, but to induce them to branch they should be cut off at a desired height, say about four feet from the ground. The top eye of the pruned shoot will at once start to grow and send up a strong single branch which is apparently determined to take the place of the cut off top of its parent. In examining now the base of this new branch we discover right at its starting point a lot of dormant eyes clustering close together, if the new branch is cut off right at its base all these dormant eyes will at once start to grow and form a beautiful crown. Plants grown in this manner will be literally covered throughout the latter part of winter and early spring with their drooping clusters of red flowers.—American Florist.

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.

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

Notes and Comments.

COTONEASTER VULGARIS.—Prof. Saunders writes: "My impression is that this would make one of the most interesting of shrubs. It grows from three to four feet high. Although the flower is comparatively insignificant, the foliage is very pretty, and the bush is covered with red berries in the autumn and early winter."

A NEW WORK ON THE CULTIVATION OF THE TOMATO has been written by Mr. S. H. Mitchell, Gardener, St. Mary's, Ontario, and dedicated to the Fruit Growers' Association of Ontario. We have made arrangements with Mr. Mitchell for the publication of this work in chapters in the columns of this Journal; and the introductory portion appears in the present number.

COLUMBUS GOOSEBERRY.—Mr. Chas. Hunter, Toronto, writes: "I planted this variety in the spring of 1893. They fruited that year, just enough to show the form and quality. This year the bushes were heavily loaded, and the fruit was of the best quality, very large in size, oval in shape, quite smooth, and greenish-yellow in color. It is greatly superior to the Industry. No trace of mildew, and a most abundant bearer."

SUCCESS TO THE WORK OF THE GOOD ROADS ASSOCIATION.—Certainly the present system of statute labor as a means of caring for our roads is out of date. Mr. Patullo's address at our Orillia meeting was excellent, and his views that regular road gangs should be enployed, is worthy of general support. Then repairs would be attended to at once where needed, drainage would be done systematically, and all work done when it could be done to the best advantage.

THE RED BIETIGHEIMER APPLE.—We are much obliged to Mr. R. M. Palmer, Inspector of Fruit Pests, Victoria, B C., for the following note on the Red Bietigheimer apple: "Regarding your notice of the Red Bietigheimer apple in December issue of the CANADIAN HORTICULTURIST, although the fruit is as stated, "large and handsome," the tree is a shy bearer in Lower British Columbia, and has no value for market purposes. Persons planting this variety here for profit will undoubtedly be disappointed."

THE POMOLOGICAL SOCIETY OF QUEBEC held their second annual meeting in the City of Quebec, on the 11th, 12th and 13th of December. They have an Honorary President in the person of the Hon. H. G. Joly, who gave the opening address His Honor the Lientenant Governor, and the Hon. Louis Beaubien, Commissioner of Agriculture, were also present and addressed the meeting. A letter was received by the writer, asking that he or some other representative attend their meeting, who in response sent a message of kind greetings. The reply was "Thanks for kind message. We are having a successful meeting."

QUEEN GOOSEBERRY.—We have received from Mr. S. Spillett, of Nantyr, some notes concerning the Queen gooseberry, a variety which he is now testing in his grounds, and in which he is much interested because of its vigor and healthy foliage. He says that he received it from Mr. A. M. Thayer, of Sparta, Wis., who writes concerning it that this berry was found in the garden of an old German, where it had been growing for many years with wonderful vigor. The bushes which he transplanted to his garden are now five feet high, six feet across, and have given a yield of thirty-two quarts of large berries. The color is greenish-yellow, and the quality excellent. Mr. Spillett is testing this variety at Nantyr, and will report to us upon its value for Canada later on.

AN IMPORTANT GATHERING.—One of the most progressive and, consequently, most valuable organizations to the fruit culturists of New York State, is the Western New York Horticultural Society. Some of the pioneer fruit-growers of this country were identified with its origin, and it has attracted to its membership many of the leading practical and scientific fruit culturists of that State, as well as representative men in other States and in Canada. This Society will celebrate its 40th anniversary January 23 and 24, in Rochester, N. Y., and while its meetings are celebrated for their attractiveness and great value, it is expected that the forthcoming 40th anniversary shall eclipse all annual gatherings that have preceded it. Its fruit exhibit, mid-winter though it be, is remarkable. At the last State Fair, at Syracuse, this Society's exhibit carried off the first prize of $200 for the largest and best collection. The annual "Proceedings" of the Society make a choice volume, not only of intensely practical information, but

of productions of exceptional literary merit, and is mailed free to all members who have paid the annual fee of one dollar, or a life membership of ten dollars. John Hall, Rochester, N. Y., is Sec.-Treas.

THE BOARD OF CONTROL of Experiment Stations met at the O. A. C. Guelph, on the 17th. The members are: President Mills, Prof. Hutt, Messrs. Smith, Pettit, Wellington and Woolverton.

The Secretary read the report of the year's operations, which he had prepared for publication in the Report of the Board of the Minister of Agriculture. After a full criticism and several amendments, it was passed.

It was also decided to accept the recommendations of the official visitors, and appoint John Mitchell, of Clarksburg, in the Beaver Valley, plum experimenter. This makes five stations, and it was decided to appoint five more, as soon as suitable new locations can be secured.

THE EXPERIMENTAL UNION, which met at the Ontario Agricultural College, Guelph, on the 17th and 18th, is an organization which is rapidly growing in influence. Composed largely of students and ex-students of the College, it has some of the most progressive farmers of Ontario among its active members, and the results of careful tests, noted by such men, added to those conducted by the able Secretary, Mr. Zavitz, on the College farm, must be of great value.

The presence of Mr. P. B. Perry, of Hudson, O, added great interest to the occasion. His talk on "Clover Culture," included a most interesting recital of practical experience, bearing out the discoveries of science. Once a schoolmaster, he had purchased an old run-down farm of fifty acres; but by growing a few acres of clover on it every year, and plowing under the second crop, he worked that farm into its present valuable condition. So fertile had it become, under this treatment, that it would now produce 200 bushels of potatoes to the acre, or 50 bushels of wheat. His regular rotation of crop was clover, potatoes, wheat.

THE NOVA SCOTIA SCHOOL OF HORTICULTURE will re open on Monday, Jan. 7th, 1895, with a four months' course in horticulture, especially adapted to young farmers and farmer's sons who can attend during the winter months. The lectures during the course are of such a nature as can be fully understood. No examinations required for admission. The instruction will cover such subjects as: formation of soils—their treatment, orcharding, vegetable gardening, nursery work, diseases of plants and their remedy, injurious insects and their treatment. The modern facilities in greenhouse, root cellar and plant house afford means for practical work in grafting, budding, pruning, seeding, cutting, etc., carrying on all kinds of work connected with horticulture on the farm. Students are asked to bring with them any problems along the line of horticulture, specimens of diseases, insects, soil, etc., for study in laboratory with

microscope, chemicals, etc. It is hoped that the young men of the Province will avail themselves of this opportunity and attend. Tuition is free. Apply early. Board at cost. Write for circulars and information to

PROF. E. F. FAVILLE, *Wolfville, N.S.*

COMPLIMENTARY.—We have a very nicely written, complimentary letter, concerning the excellent work of the Ontario Fruit Growers' Association, from Miss Grace Towey, a Gravenhurst young lady, which we gratefully acknowledge.

THE ELBERTA PEACH, according to Mr. J. H. Black, of Highston, N. Y., has been tried as far north as Poughkeepsie, and is perfectly hardy. He further writes, that our colored plate on page 305, Volume 18, does not do it justice The peach is more the shape of a lemon, of lemon-color, with less red, and prettier than as shown.

ERRATA.—On page 433, volume 17, credit article on "Utilizing Cellar's Warmth," to American Gardening; also on page 440, article on "A Cheap Greenhouse and Cold Frame," should be credited to the same journal.

THE ORILLIA MEETING of our Association last month, was one of the most enthusiastic and profitable we have had for a long time. The local interest was very great, and to the officers of the Orillia Horticultural Society is largely due the excellent results obtained. From Tuesday evening until Thursday evening the meetings continued without flagging in the least. The programme was not completed even then, but an invitation from the Mayor and Corporation of Orillia to visit the town, and from Principal Beaton to visit the Asylum having been accepted, it was necessary to close and do this on the Friday morning.

Some of the papers read appear in this number, and the whole report will be placed in the hands of our readers as early as possible. We were very fortunate in having with us representatives of so many Colleges and Experimental Stations, which gave so much weight and value to the record of the proceedings.

The drive out to the Asylum for Idiots, on Friday, was delightful. It is beautifully situated on an eminence overlooking Lake Simcoe. It is a magnificent pile, lately erected by the Province of Ontario; the rooms are spacious, the halls broad, the reception rooms elegant, and indeed everything about the place is most homelike and appropriate. The Principal is ably assisted by six lady teachers, viz.: Miss Christie, Miss Lafferty, Mrs. Anderson, Mrs. Clifford, Miss Fielding and Miss Oaten, whose faithful industry and enthusiasm in their work deserves especial mention. There are 550 inmates, over one hundred of whom are children, and these latter are being taught such things as their weak minds can follow. Only a philanthropic spirit can support one when engaged in work among such caricatures of humanity, and where so little response is shown to patient endeavor. The salaries of these earnest teachers deserve to be doubled.

After lunch and speeches at the Asylum, the whole party visited the residence of Mr. Stevenson, the Secretary of the Orillia Society, so romantically situated on the shore of Lake Couchiching, half hidden away by beautiful climbers, and grand old forest trees. No wonder he calls it the "Hermitage." Here Mr. Stevenson indulges his taste for the æsthetic in nature, as well as in many branches of practical fruit growing.

One special feature of our Orillia meeting was the presence of so large a number of ladies; and that two of them, Mrs. McHennell and Miss Hodge, contributed papers. These were much appreciated, and will appear in our report. That by Miss Hodge appears in this number of our Journal; she is a practical florist and all she says will be duly appreciated.

The next meeting will be held in Woodstock, in December.

GRADES OF CANADIAN APPLES.

By favor of the Hon. J. F. Wood, we have received a copy of amendment to the General Inspection Act, assented to 1st April, 1893—so far as regards the grades defined for Canadian apples. It is as follows:—

1. The section, numbered one hundred and ten, added to *The General Inspection Act*, chapter ninety-nine of the Revised Statutes, by section seven of chapter twenty-three of the Statutes of 1892, is hereby repealed and the following substituted therefor:—

"**110.** No 1 inspected Canadian apples shall consist of well grown specimens of one variety, of nearly uniform size, of good color, sound, free from scab, worm-holes and bruises, and properly packed.

"2 No. 2 inspected Canadian apples shall consist of specimens of one variety, reasonably free from the defects mentioned in class No. 1, but which, on account of inequality of size, lack of color, or other defects, could not be included in that class."

This much then should be quite satisfactory to fruit growers generally in Ontario, who should now be able to quote prices direct to English wholesale buyers, and even to retail grocers and private consumers, f.o.b., on these well defined grades.

If then the fruit is according to grade agreed upon, it is a sale; and much better prices would result, providing confidence can once be established.

The next question is concerning the appointment of an inspector, who could, on request, inspect and place the Government brand upon the fruit it true to grade. It should also be his duty to prevent, as far as possible, the sale of all fruit which is fraudulently packed, either when offered for sale in home markets, or when being shipped for export.

Something of this kind is necessary to prevent Canadian apples from losing their fair name abroad, which their excellence really deserves.

Question Drawer.

Cabbage Fly and Onion Maggot.

684. What, in your opinion, is the most effective means (without change of ground) of preventing the ravages of the onion and cabbage maggot?

In reply, we quote from Bulletin 11, of the Central Experimental Farm.

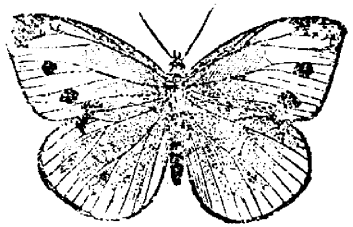
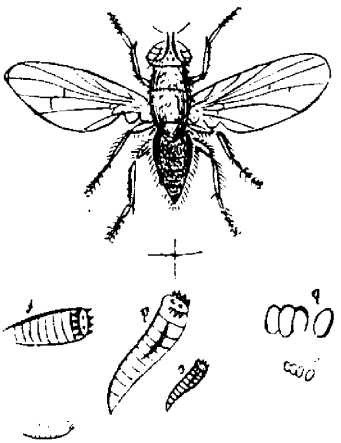


FIG. 719.

IMPORTED CABBAGE BUTTERFLY (*Pieris rapæ*, L.).—The white butterflies which fly over cabbage beds during summer, lay eggs on the leaves, from which are hatched the troublesome Cabbage worms.

Remedies.—The best remedy for this insect is undoubtedly insect powder diluted with four times its weight of common flour.

ONION MAGGOT (*Phorbia ceparum*, Meigen).—Equalling in destructiveness and more difficult to deal with than the Cabbage and Radish Maggots, is the Onion Maggot (Fig. 720.)



ONION MAGGOT.—FIG. 720.

Remedies.—Rich, well-worked soil and early planting are advised.

1. Kerosene emulsion watered along the rows when the onions are found to be infested, has proved successful.

2. A sprinkling of gas-lime, sown broadcast over the beds every two weeks, was also found to protect the crops considerably, and was thought to act as a good fertilizer.

Suggestion.—I would suggest the use of nitrate of soda, at the rate of 200 lbs. to the acre; this is a valuable fertilizer, and has been found of marked use in checking the ravages of the Cabbage Maggot. In addition to nitrate of soda, kainit has been used with great success in the State of New Jersey, by some of the large vegetable growers.

Tomato Rot.

685. What is the best preventive for tomato rot? Is there any preventive for the ravages of cut-worms in strawberry plantations?

Reply by Prof. Fletcher, of Central Experimental Farm, Ottawa.

If true cut-worms are really meant in this question, my answer is that the best remedy is the use of the poisoned traps mentioned on page 27 of Bulletin

11. But if white grubs, or larvæ of the June beetle are meant, the best remedy is adopting the one year system of growing strawberries, as recommended some years ago by Mr. Dempsey, in one of our Fruit Growers' Association reports. By this method the old plants are ploughed up as soon as the runners are rooted, the latter only being left, every year.

Peaches for Brant County.

686. SIR,—Could you name any peaches that are more suited to this section than Crosby, Hyne's Surprise, Horton's Rivers, Early Crawford? This latter does not seem to succeed well in this section.

ED. MAUS, *Echo Place.*

Reply by W. W. Hillborn, Leamington.

I would recommend Alexander, Barnard, Crosby, Tyehurst, Hill's Chili. The two latter are the most hardy of any that I have thoroughly tested in this locality.

Dwarf Apples.

687. SIR,—Please give me your opinion of dwarf apples. Are they hardy and productive?

WM. HANNA, *Rockton, Ont.*

Apples trees are dwarfed by grafting or budding them on the slow growing Paradise stock. This is thought to be hardy, and on that account much planted about Montreal, but the chief value of dwarf apples is their early fruiting, and the fact that they can be kept in such small compass that a great many varieties can be grown in a small garden. Tree for tree, when full grown, they are not capable of producing nearly as much as standards. Besides many excellent varieties are quite hardy in the cold sections.

Open Letters.

The Fameuse Apple.

SIR,—Please accept this Christmas box of Huron Snow apples; it will perhaps strengthen your opinion as to their place as a dessert apple when properly grown, and, thanks to the knowledge of spraying, my one tree gave me three barrels of splendid apples, perfectly free from worms and very little scab. And I remember with pleasure the social chat we had in your little office at the World's Fair on its merits as a dessert apple, and I am in great hopes of it being reinstated to its well-known high place among dessert apples through proper spraying. Wishing you a merry Christmas and happy New Year.

W. WARNOCK, *Goderich.*

We sincerely re-echo the wish of our correspondent concerning this excellent apple, which is unsurpassed for dessert purposes, and would be a source of

untold wealth to Canadian apple growers if it could be grown to perfection as of old, and properly placed in those markets where it would be most appreciated.

Red Raspberries for Profit.

An article on page 426 of the December HORTICULTURIST taken from the Country Gentleman, calls for some comment. Evidently the writer has very little experience, as he does not even know the Cuthbert raspberry with any certainty. Evidently he has planted a few hills on a choice spot, as he has, he says, picked four to five quarts from hills containing about that number of canes. Such canes deserve some sympathy. He thinks that three quarts per hill could be reckoned upon. An acre would yield 7,500 quarts, which at 10c. each would mean $750. All this can be done upon paper, and this is where the writer does it. If he, or any one else, attempts to do it on any ordinary soil he will do remarkably well if he reaches one-third of the above amount. "It costs no more to pick them than it does to pick strawberries," says this writer. Any child in any berry region could tell him better than that. "The care and cultivation occupy much less time than strawberries and are consequently much less expensive," according to this fruit boomer. Sometimes people write upon fruit growing who would shine as novelists. A lively imagination is very nice, but it needs a special soil with lots of manure, lots of work, and two or three years of time to get a good crop of red raspberries. It costs more to grow them, more to pick them, and the yield is less than that of strawberries.

Hitherto raspberries have brought better prices and have paid as well where soil, etc., were suitable. Just now there is danger of over-production, and reckless writers may increase that difficulty. Red raspberries on rich soils should be planted in rows about 6 feet asunder with hills three to four feet asunder. Many soils are not suited to them, and many people are not suited to the business of caring for them. With the right man and the right soil near a good market, they pay as well as most fruits or vegetables—"only that and nothing more."

E. MORDEN, *Niagara Falls South, Ont.*

Fruit Growing in Muskoka.

SIR,—I have just had the pleasure of attending the Fruit Growers' Convention in Orillia, and, as I have been a member of the Society for some years, I had often wished to attend a Convention.

My attention was drawn to what appeared to be a wrong impression among the members with regard to fruit growing in Muskoka. Now we certainly do not grow peaches; but our strawberries, currants, grapes and apples would compare favorably with any grown farther south.

We can say from experience that strawberries are as successful and profitable in Muskoka as anywhere in Canada. The last two years, our first picking sold on June 22nd, brought 12½ cents a basket, and 8 cents is an average price for the season. In apples, we have Tetofsky, Duchess, Alexander, Gideon, Wealthy, Mann, Ben Davis, and some others, which have all proved hardy and yielded good crops. Any Crab apples planted have always proved successful, and we have some excellent varieties; but of late years they are only considered as secondary, as standard apples are quite successful if carefully cultivated. As there is no limestone, we supply the want by applying hardwood ashes, which is abundant.

Plums and pears have not been cultivated enough to show how they would succeed, yet we have a good variety of wild plum that is cultivated by some and is excellent for preserving. In apples, this spring, we planted McIntosh Red, Ontario, Pewaukee, Princess Louise, Yellow Transparent and Red Bietigheimer. If these kinds prove hardy, I think we will have a good selection of early summer and late winter apples. One trouble with us is, we have to pay high prices for nursery stock and do not always get trees true to name, which often proves disappointing. If any of the Stations would kindly spare us a dozen of trees, each tree of different variety, we would pay every attention to their cultivation and report on the same as required. My letter has reference to that portion of Muskoka lying along the east shore of Lake Muskoka.

If anyone should wish to ask any questions with regard to fruit growing in this section, we will try to give all the information possible on the subject.

JESSE PARKER, *Gravenhurst.*

Experience in Tile Draining.

SIR,—The following experience I have had with drain pipes may be of assistance and benefit to readers of the HORTICULTURIST. In 1891 I tile-drained four acres of heavy clay land. These drains emptied into a six inch sewer pipe running from centre of land to the lake. the shoulders of sewer pipe being put together with blue clay. In 1892 the drains worked well, in 1893 very badly, and the present year they would not work at all: my cellar, which also had a pipe to the sewer, being flooded with back water. Feeling sure there was some stoppage of the main pipes, I had drain examined, and it was found that the roots of two willow trees that stood outside the grounds had gone down eight feet into the clay, sent rootlets through the blue clay in shoulders of sewer pipes, and filled up the drain completely for a distance of 25 feet, making it impossible for water to escape. The roots of these willows were found in the drain for a distance of 108 feet inside of pipes. The outside of the pipes were so encircled with the roots that they had to be cut away. One of the trees was 7 feet away from the pipe, the other 18 feet.

It is not unusual for willows to send roots long distances for water, and I expected this, but supposed the sewer pipe shouldered with blue clay would have been sufficient protection. They are now put in with cement, and the willows cut down. I send you to-day by post section of rootlets as taken from pipe.

CHARLES HUNTER, *Toronto.*

Non-Fertilization of Grape Flowers.

SIR,—I have had a little experience with some grape vines that I am sorry I did not relate at Orillia, as it substantiates Prof. Beach's contention. Four trellises of six vines each were planted side by side; two trellises were Rogers' No. 9, the other two were Niagara, Worden and Moore's Early. I removed the latter two, after which Rogers' No. 9 never bore another grape, but fell off when as large as No 8 shot. I dug them all up.

STANLEY SPILLETT.

Plum Growing, Etc.

Where can I get a good book on plum growing? What plums are the hardiest and best? What soil is best for the plum? What fertilizer is best? What are the hardiest varieties of peaches and apricots?

ALVIN STOWE, *Cedar Springs, Ont.*

Question Budget.

Replies to these questions are solicited from our readers.

1. I have the Glass seedling plum, which I received from the Association. It has grown to be a large tree and hardy, standing the severe winter of some dozen years ago, when most other varieties of plums perished. It bears a large bluish purple plum, but with me it is a very shy bearer, perhaps from ten to twenty plums in a year. Now I see other accounts, that it is a very productive variety. Now my tree is standing in an apple and pear orchard, away from any other plum trees, and perhaps it requires some other variety of plum near it, to fertilize it. Can you throw any light on the matter?

JOHN M. MCAINSH, *W. Nissouri, Co. Middlesex.*

2. What is the best kind of artificial fertilizer for raspberries, and what quantity should be applied per acre to plants on strong clay loam?

W. J. R., *Oshawa.*

3. I think of planting a set of roses in the spring. I have been reading the Hon. Mrs. Lambert's nicely written article in your August number, and intend to adopt her list of hardy roses. Am I to understand from her article that neither yellow nor moss roses require covering in the latitude of Ottawa? What is meant by remontant and non-remontant roses? A word regarding the various insects and how to combat them would be interesting. NOVICE, *Guelph.*

4. I see in your valuable report, advice about ploughing in autumn to kill grass-hoppers. Would it do any good to harrow in grass lands in autumn, with a sharp harrow for the same purpose? PETER BRENNAN, *Lakeside.*

5.—Will our readers please send in their replies to these questions for publication? We want the experience of the many in such questions.

Best Varieties to Plant in Southern Ontario.

1st. What sorts would you select if planting 1,500 peach trees for best results?

2nd. What would you plant for best sorts of plum if planting, say, 200 trees?

3rd. If planting, say, 200 pear, dwarf, or standard, which sort would you choose for best results and earliest returns?

4th. If setting out 100 cherry what would you choose on for best results and shortest time?

5th. If setting out 2,000 grapes, what would you plant for the very best and earliest return?

6th. What should the crop from the above amount of trees and vines be worth at the sixth year from planting, or an average with former years past? Hope you can give me some idea in this matter.

Yours truly, W. CAMPBELL.

Our Markets.

New York.—Messrs. Palmer & Frost report, December, 12th ult.:—Apples, Spitz, $2.50 to $3.50; King, $2.50 to $3.25; Snow, $2.00 to $2.75; Spy, $1 75 to $2.25; Baldwin, $1.50 to $2.00; Greening, $1.75 to $2.50; Common, 75c. to $1.25; Grapes West N. Y., Catabas, 11c. to 13c.; Concord, 11c. to 13c.; wine grapes, 2c. to 2½c. Evaporated apples, 7½c. to 8½; raspberries, 18c. to 18½c.; beans, marrow, $2.25 to $2.27½; medium, $150 to $1.75; white kidney, $2 50 to $2.35; red kidney, $2.10 to $2.15; chestnuts, $1.50 to $2.50 per bushel; hickory nuts, $2.50 to $2 75.

England.—Messrs. John Seed & Son, of Hull, report on apples as follows:—Demand continues good at unchanged prices, and sound parcels meet ready sale at full values. For consignments of Baldwins *ex* "Bostonian," (*via* Liverpool), prices ranged from 12/5 to 13/6 per barrel for "Tights" with "Slacks" 1/ lower. Other varieties at above prices. No Canadian fruit on the market.

Liverpool.—Messrs. Simons, Shuttleworth, cable Dec. 19th:—Market opened weak and closed the same; demand not equal to the supply: Baldwins, Greenings and Spies, 12/6 to 16/; G. Russets, 14/ to 16/6; Kings, 17/ to 19/; Cranberry and Ribston Pippins, 15/ to 17/6; R. Russets, 11/6 to 13/; C. Reds and Seeks, 12/ to 13/6. Only choicest fruit reached top prices. Lower grades and conditions, 4/ to 6/ less.

The Trade Bulletin says:—Cable advices just received report a much better state of affairs in the Liverpool apple market, one report of Wednesday's sales stating: Market lively; Baldwins 12/ to 18/, Greenings 14/6 to 20/, Spies 14/ to 18/, Russets 15/ to 17/6, Kings 20/ to 28/. Another cable said: Market opened strong, and continued so during the day. The outlook is favorable so long as shipments continue light. Baldwins 13/ to 16/; Spies 11/ to 14; Greenings 13/ to 16/; Russets 11/ to 14/; Kings 19/ to 20/. Some fancy fruit brought higher quotations.

In this market there is a better feeling in sympathy with better news from Liverpool, and we quote fine winter assortments $2.00 to $2.25 for round lots, and fancy stock at $2 50 to $3.00. Poor stock, however, is difficult to sell, about 300 to 400 bbls. bringing on Wednesday $1.50 to $1.75 per bbl. Advices from the West report the sales of two cars of fancy Baldwins, Spies and Greenings at $2.60, and 500 bbls. do. at $2.50 f. o. b. Returns from a lot of Maine Baldwins sold in Leith show $1.75 net to the shipper.

Notice to Subscribers For 1895.

1. Subscribers sending in their subscriptions of $1 for the year 1894, or 1895, until further notice, are entitled to receive:

(a) THE JOURNAL for one year, dating from time of subscription if for 1895;
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The ornamental plants all come to Association from the Central Experimental Farm, Ottawa. We have: Cotoneaster Vulgaris, Rosa Rubifolia, Douglas Spruce, Pinus Ponderosa, Pearl Gooseberry, Sarah Raspberry. These are larger size than those sent out last yoar: as large, indeed, as we can send by mail.

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Should send in the names of their members for 1895 in advance, even if it be necessary to wait a little for the payment, in order that all may be booked for their plants, reports and Journal in good time.

Correspondence with such Societies is solicited in order that mutual assistance may be rendered, especially in the purchase of plants for distribution. Address—

L. WOOLVERTON, Sec. Fruit Growers' Assoc. of Ont.

Our Book Table.

ANNALS OF HORTICULTURE in North America for the year 1893. A witness of passing events and a record of progress, comprising an account of the Horticulture of the Columbian Exposition, by C. N. Bailey, Cornell University, Ithaca, N. Y. Every intelligent horticulturist who wishes to keep in touch with the most progressive horticulturists, should have this annual publication of Prof. Bailey's.

THE BIGGLE BERRY BOOK beats all books of its class for its bright and attractive shape, filled with illustrations, both engraving and colored plates, with information about planting, varieties, growing, markets, etc. It is edited by Judge Biggle, a practical grower, and sold for 50 cents.

HANDBOOK OF THE INSECT PESTS OF FARM AND ORCHARD, THEIR LIFE HISTORY AND PREVENTION, is the title of book published by the Department of Agriculture in Tasmania. It contains the substance of very interesting lectures before the farmers of that country, with plates in illustration.

In speaking of the remedies for apple scab, he advises winter spraying with kerosene emulsion. He bases this advice in the belief that the surface of twigs and bark is always covered with the spores, and the simplest and cheapest thing to do is to destroy them at this time. We cannot see why he should prefer the kerosene emulsion to copper sulphate (15 lbs.) in water, (40 gals.), which is surely as effective and easier of application.

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