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AUGUST, 1895.

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ORTICULTURIST.

A JOURNAL DEVOTED TO FRUITS
 FLOWERS
 FORESTRY

EDITED BY L. WOOLVERTON, M.A.

PUBLISHED BY

* THE FRUIT GROWERS ASSOCIATION OF ONTARIO. *

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A GOOD VASE PLANT.

An excellent plant for a large vase in the centre of a bay window is a *Yucca formosa*. This variety does not grow tall, and therefore will not obstruct the entrance of light, as some tall-growing varieties of this class of plants would. It has foliage of a pea-green color, each leaf being about an inch in width and two feet long, and these are produced so thickly on the short, stout stalk that a well grown specimen is a perfect mass of foliage, reaching out in all directions about the plant. It is valuable for house culture because it is so well able to withstand the effects of dry air, gas and heat.—VICK'S MAGAZINE for December.



WHITESMITH.

THE
Canadian Horticulturist

VOL. XVII.

1895.

No. 8.



THE WHITESMITH GOOSEBERRY.



FRUIT growers are too apt to copy after each other. One is successful in making money out of a certain fruit, and immediately all plant largely of that one fruit, and so overstock the market. The wisest plan is plant a little out of the popular line, and better profits are likely to result. The gooseberry, for example, has not yet been very largely planted for market in Ontario; and yet, where land is suitable for growing the finer kinds, there is money in growing it. A high and dry land, a mixture of clay and sand, highly fertilized, will grow gooseberries to the greatest perfection, and often quite free from mildew, as witness those grown by Mr. Morton, at Brampton, or by Mr. Spillett, at Nantyre. Even the English varieties may now be grown nearly mildew-free by the faithful use of the Bordeaux mixture, and if such fine English sorts as the Whitesmith and Crown Bob, why plant the smaller varieties?

In our report of 1892, page 61, Mr. Thos. Beall, who has had considerable experience with this fruit, named as the three most profitable varieties, the Whitesmith, Pearl and Downing. We think he might well omit the Downing, for the Pearl is of the same character, often indistinguishable, except that it is a trifle larger and more productive. He further thought the gooseberry one of the most profitable fruits grown in Canada. Mr. T. H. Race, of Mitchell, Ont., on the same occasion, placed Whitesmith at the head of the list for profit. This gentleman has in his garden about 200 bushes of this variety, and is not troubled with mildew. His soil is clay loam, enriched with wood ashes.

At Maplehurst, on sandy loam, this variety has mildewed badly, but for two years past we have controlled it by spraying with the Bordeaux mixture. Mr. Brodie, of Montreal, says in our report of 1888, page 92, that the Whitesmith is the principal variety grown for market about Montreal, but a Mr. Mathewson of that vicinity stated that on light, dry soil it had failed with him. The average yield of a goosberry plant is placed by several growers at from 12 to 14 quarts, and the average price 6 cents a quart.

The *Whitesmith* is described as large, roundish oval; color, yellowish white; skin, slightly downy; of first quality. The berries shown in our colored plate are larger than the average as grown in Ontario.

Do not Cut Asparagus.—There is no need of it. It is economy *not* to do so. The bed should be gone over every day and all shoots that are four inches above the surface the soil should be *broken* off. If allowed to grow taller than that, it means only so much waste. We wish only the tender, edible part. The white portion is not edible. Why, then, use a knife? why wait until the old, white portion of the stem has made a growth of several inches above the soil? The white part takes as much food from the soil as do the tender, green tips. If, then, we permit the shoots to grow six inches or more above the soil, we make a needless demand upon the vitality of the roots and the food of the soil, merely to collect a waste, worthless product.

The green, tender parts of asparagus should not be sent to market in bunches at all, but should be sold by the pound as fresh mushrooms are sold. If the writer of these notes lived in a village, or even in a city, and owned or controlled a "yard" as large as 25 x 100 feet, a portion—if but 25 x 10 feet—would be devoted to an asparagus bed. The plants themselves are beautifully feathery and graceful and may be used for boquets or masses of green, as well as the "ornamental" asparagus plumosus or tenuissimus.

Growing Aquatics.—Once upon a time the writer of this paragraph was invited to a nursery celebrated for its large business in connection with the growing of water plants, or, as they are commonly called, aquatics. As the locality was far away from lakes or ponds, much curiosity was felt as to how the large quantity of plants was cared for. It was found that nearly everything was being raised in old kegs or barrels, sunk deep into the earth, and where water could be led into them by a hose or other methods. The hint may be taken advantage of by those who read of the beauty of aquatics, but do not have lakes or ponds of their own to grow them in. Old paint kegs, or any vessels that will hold water, can be buried partly in the earth, filled with water, and seeds sown, or young plants planted in mud placed at the bottom of the water. Many of the smaller kinds of water plants can be grown in this way without any serious difficulty. The vessels need not be water-tight.—Meehans' Monthly for July.

THE CHERRY SEASON AT MAPLEHURST.



It is not often we have such fine cherries as we have just harvested. Usually the cherry rot, *Monilia fructigena*, is very prevalent in Ontario cherry orchards, and destroys a large part of the crop. Some of our best varieties for market are very subject to this disease, and almost the whole crop is destroyed by it in wet seasons; but this year, owing no doubt to the dry weather, our cherry crop at Maplehurst was an excellent one. There was scarcely a trace of rot, and, though badly thinned by the frosts, yet every cherry that escaped grew to perfection.

If, by the use of Bordeaux mixture, we could succeed in producing fruit as clean as that of this present season, there is no reason we should not succeed in cherry growing and shipping quite as well as our California cousins; besides having much nearer markets. In our cities we see California cherries in perfect condition, evidently the result of the dry climate of that country.

The first really good cherry of the season with us is the *Governor Wood*. True, we have Early Purple preceding it about a week or so; but it is not a meaty cherry, and is nearly always eaten by birds, before it can be harvested. The Governor Wood, on the other hand, is not so subject to the ravages of the birds, is a delicious white-heart cherry of the best quality. This year it began ripening about the 16th of June and continued until about the 26th.

It is a productive variety, also; one tree, this season, yielded seventy-two quarts, and that might be looked upon as about half a full crop, for about half was destroyed by the frost. The tree of course is a full grown one, being about years planted. The variety originated in Ohio.

There are several other varieties of white cherries ripening about with the Governor Wood, which we will speak of more fully some other time, *e.g.*, the *Rockport*, *American Amber*, *Coe's Transparent*, and *Elton*. The latter is a particularly fine flavored white-heart cherry, of great value for canning, except for its soft flesh, and its tendency to rot in wet seasons.

The *Black Tartarian* is the most prominent of our black-heart cherries, and although of Russian and West Asian origin, introduced into England about one hundred years ago, succeeds admirably in the Niagara peninsula. The fruit is of tender flesh, dark colored and juicy, of large size, rich flavored and delicious. Birds as well as men, have a special preference for this cherry, and its tender

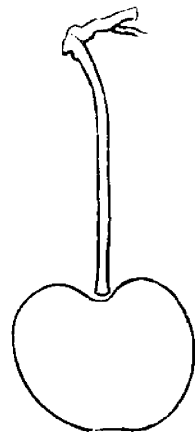


FIG. 805.
GOVERNOR WOOD.

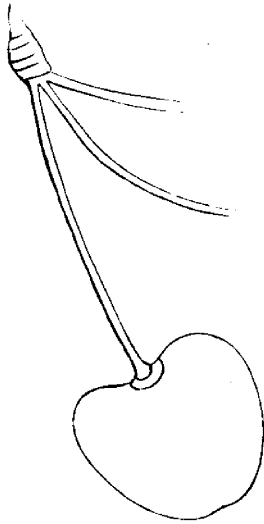


FIG. 806.

BLACK TARTARIAN.

flesh especially invites the former. Therefore, in order to secure the crop, we find it necessary to begin harvesting them on the green side. The picking for this cherry began with us this year on June 22nd, and the fruit not picked hung until the 30th.

The Tartarian cannot be called a heavy bearer, because the fruit does not grow in such clusters as that of some other varieties, but the large size to a certain extent makes up for the number in cluster. One thirty year old tree at Maplehurst this season yielded about fifty-five quarts, in spite of the frost.

Of other black-heart cherries, we will briefly refer to the *Knight's Early Black*, which ripens a few days in advance of the Tartarian. The fruit is not quite so long and a little more obtuse heart-shaped; it is a little more even in outline, otherwise it much resembles the latter variety.

The fruit is inclined to grow singly, and this makes the gathering rather slow; besides, it is less productive than the Tartarian. A full grown tree at Maplehurst yielded about thirty quarts in 1895, and this may be called a full crop.

The *Black Eagle* succeeds the Tartarian, beginning to ripen this season about the 28th of June. It is also a delicious heart cherry, if anything smaller than the Knight's Early Black. The fruit is grown in somewhat sparse clusters, and the tree is only moderately productive, our large trees giving about forty

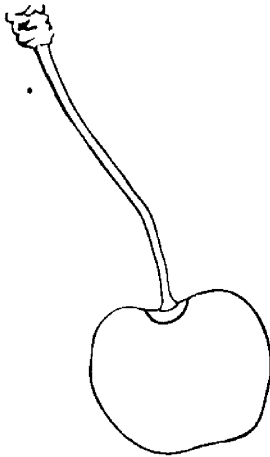


FIG. 807.

KNIGHT'S EARLY BLACK.



FIG. 808.

A BRANCH OF THE BLACK EAGLE.

quarts each. The little photograph will show the clusters on a branch of this variety.

Of the Bigarreau cherries, the leading variety for productiveness is the Napoleon Bigarreau, a branch of which, as grown this year at Maplehurst, we have photographed to accompany this article. This is no exceptional branch, for it is the habit of this variety to load in great clusters, a great advantage in harvesting, provided the fruit is free from rot. This variety is unfortunately very subject to this disease, and sometimes almost the whole crop is destroyed by it. Otherwise this is the most productive of all varieties, a hundred quarts being a very ordinary yield from a full grown tree. We add an outline of the cherry in order to show the exact size. The skin is white, well shaded with light red, and the flesh is very firm. It is one of the largest of cherries, and altogether well fitted for the commercial cherry orchard.

The *Yellow Spanish*, is another magnificent variety, often exceeding in size even the Napoleon, especially when the crop is light, as indeed it



FIG. 809.—NAPOLEON BIGARREAU.

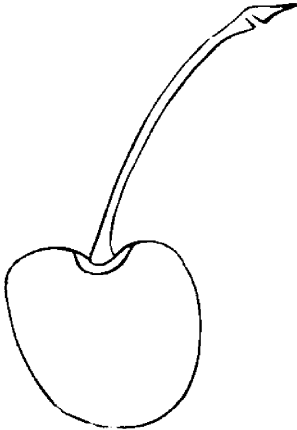


FIG. 810.
NAPOLEON BIGARREAU.

fruit. The skin of this cherry is yellowish white, with deep red blush, and the flesh firm, and also yellowish in color.

This variety is the favorite one at Maplehurst for canning for home use. It began ripening this year about July 1st. We add an outline in order to give a more correct idea of the size as grown with us in 1895.

Of this same Bigarreau, or firm fleshed type, we have two excellent black cherries ripening late in the season, viz., the *Trades-cant's Black Heart*, an old and well known European variety, of dark purple skin and firm flesh and good quality. It is a very productive cherry, and one that carries well to market. The other is the *Windsor*, a new variety of Canadian origin, which is rapidly gaining favor with planters as an excellent late black cherry. The tree of this

it too often is. It too is sadly subject to rot. In the year 1894 we did not gather a single basket, from this cause; every cherry rotted before ripening. This year, however, the case was wholly different, and it exceeded all past records of productiveness. One fine old tree yielded 132 quarts of the finest sample of cherries, and here again we have brought our camera into use, to show our readers a branch from this very tree, and the beautiful clusters of large sized

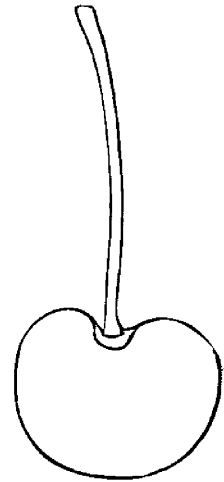


FIG. 811.
YELLOW SPANISH.



FIG. 812.—A BRANCH OF THE YELLOW SPANISH.

variety at Maplehurst is only three years planted. It is evidently a strong, vigorous grower, and quite productive.

The cherry is obtuse, heart-shaped ; dark red in color, and the flesh quite as firm as that of Tradescant's Black Heart. The quality seems excellent for all purposes. It ripens on the 5th of July, and hangs on the tree until the 13th. Cherries picked and left in the house keep without change two or three days. The fruit is borne in clusters, which are very easy to gather.



FIG. 813. —MONTMORENCY (LARGE).

Of the Morello cherries, we have noted particularly the behaviour of the *Early Richmond* and the *Wragg* this season. After reading so much in Nurseryman's catalogues of Kentish, Early Richmond and Montmorency Ordinire, it was rather a surprise, after fruiting them all, to find them one and the same cherry, with possibly a few slight variations where reproduced from the seeds. Suppose we call them all Early Richmond, would it not be better for all concerned? There is also the Late Kentish, which differs chiefly in time of ripening, and which is well known throughout the country as the Common Red, or, Late Pie cherry.

The Early Richmond is a valuable cherry for pies and for canning. The tree is hardy and may be grown much farther north than the Heart and Bigarreau

cherries above mentioned, besides it is a profitable fruit to grow for market. One difficulty attends it wherever grown, and that is its susceptibility to black knot.



FIG. 814.—WRAGG CHERRY.

There is also a large fruited Montmorency offered for sale, which seems to be larger and later than Early Richmond. The accompanying photograph of a branch from a young tree at Maplehurst, three years planted, will show the fruiting habit of this very promising variety.

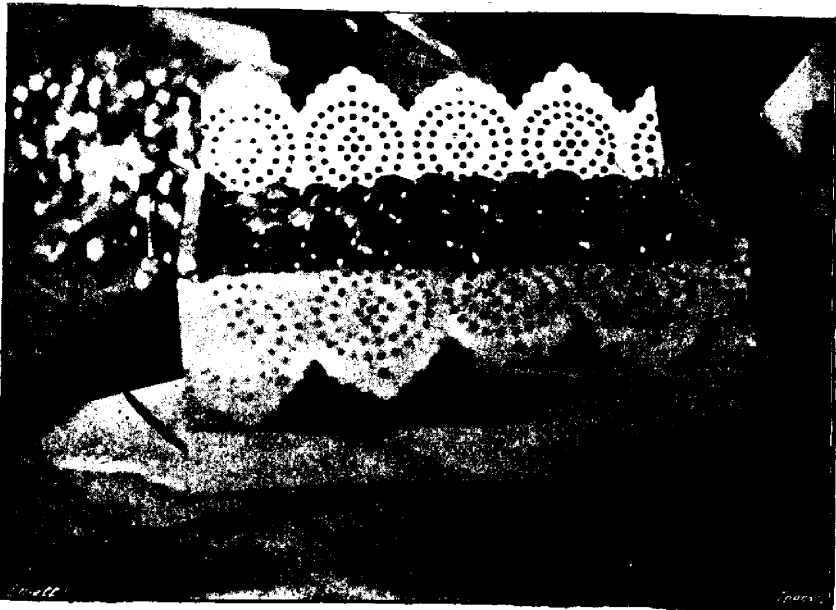


FIG. 815.—FANCY PACKAGE OF YELLOW SPANISH CHERRIES.

The Wragg trees have been planted five years, and are this year heavily laden with fruit. This variety has no very great merit to commend it that we can see, for the tree is scarcely as thrifty as the Late Kentish, and the fruit is no better, if as good. Possibly it is hardier, and possibly more productive; certainly this season it does outbear that variety.

The color is a darker red than the Kentish, and the flavor scarcely as good. A small cluster is shown in the accompanying photogravure.

The harvesting of the cherry crop is not so great a difficulty as many imagine. A good man will easily gather fifty quarts a day, and with some varieties, such as the Napoleon, he will gather one hundred quarts, or more. The usual cost of picking cherries, therefore, is from $1\frac{1}{2}$ cents to 2 cents per quart.

They are usually packed in six or eight quart baskets, but this season we packed the finest in a more fancy package, viz., in boxes with sliding covers, holding about three quarts each. The cherries were packed from the bottom, paper of a suitable color being first laid against the lid. The cherries are rowed neatly against the top, and the box turned over and bottomed.

The accompanying engraving shows one of these boxes packed, and the sliding cover removed, standing upon others closed. These are crated—six in a crate—and find ready sale at fancy prices.

The Peach Tree Aphis.—The peach tree aphis, a species of plant lice, has, in many instances, seriously injured the peach seedlings in the nursery rows and one and two-year-old trees in the orchards. It is seldom that they cause serious injury to the older trees. This aphis is a small, dark brown or black, soft-bodied insect, about one-twentieth of an inch in length, and has a beak through which it sucks its food. A few of them, the males, are provided with wings, but the greater number are wingless. They feed upon the juice of the tree, and can frequently be found in large numbers upon the under side of the limbs all through the winter season. As soon as the tender leaves begin to unfold in the early spring, they concentrate their attacks upon them, and very often entirely destroy the first that appear, thereby greatly injuring the growth of the young trees. I have successfully destroyed these plant lice by spraying infected trees with a decoction of tobacco water, made by steeping 1 lb. of tobacco in 3 gallons of water. The stems of the tobacco may be used for this purpose. The kerosene emulsion has also proved effectual. This is made by dissolving 1 lb. of hard soap in one gallon of boiling water. After removing from the fire add 1 gallon of kerosene oil. Pump this mixture through a force pump back into the same vessel until it assumes a thick creamy consistency. This mixture must be diluted with 13 gallons of water before using. These plant lice are seldom found upon the limbs of the trees in the summer, as they migrate to the roots where they remain during the hot season, returning to the limbs during the early fall and winter months.—M. H. BECKWITH, Delaware Experiment Station.

CULTIVATING THE ORCHARD.



GREAT many oppose the idea of cultivating an orchard after the trees are once set out. There is an idea that cultivation will injure the roots of the trees and so disturb them that more harm than good will result. I presume that from this idea has developed the general practice of neglecting the orchard entirely. No manure, no trimming, no budding or grafting, no pruning, and no spraying. The trees are left to take care of themselves, and the result is plain to all. Fruit growing is said to be a failure. It is all right to raise enough for home use, but there is no money in it.

An orchard needs just as much attention, in one sense, as a field of wheat or corn. The trees need spraying, thinning out, trimming, pruning, manuring, and cultivating. But the exact meaning of cultivation should be understood before anything else is said. There is no doubt about it that by loosening the soil around any plant and cultivating it with plow, harrow and hoe, we greatly hasten and stimulate its growth. Those who do not believe in cultivating the orchard claim that a good grass sod cut off smoothly keeps the soil cool and moist, strengthens the vitality of the trees, and makes them very long lived. Crops grown between the rows of trees rob the soil of nutriment that should go to the trees, and is consequently very injurious.

All of this may be granted, but that does not include the meaning of the term "cultivation of the orchard." Cultivation of crops in the orchard is very different, but sometimes more than this is required. We need to cultivate the crops and the orchard. Sufficient manure should be applied to satisfy both the needs of the trees and the plants between them. Then good stirring of the soil and cropping of the plants will not injure the trees, but will make them grow faster and surer.

As to the question of injuring the trees with the plow and harrow, it may be said that these implements should not be brought so close to the trunks as to be able to touch the roots. Never let the soil get so hard and baked that the hoe will not be able to turn up the soil with a little hard labor. Use the plow as close to the trees as the outside limit of the limbs. The roots generally run just so far, and no injury can be done by plowing up the soil to that limit. Then use the small hand cultivator, spade or hoe. The soil can easily be turned over in this way around the trees, and if kept very mellow it will be no greater work to cultivate the trees than the corn or vegetables. Apply the manure inside of the root circumference, and work it in well with the hoe or spade.—Rural Canadian.

THE QUALITY OF APPLES.



O be successful in fruit growing, more attention must be given to secure fruit of high quality. If only first-class fruit be offered for sale, the demand for it will be enormously increased. Quantity has been too long the chief aim of growers. The inferior varieties, that yield more largely, have taken the place of those of finer quality, which were shy bearers. This has been especially true of apples. Color has, however, counted as an important factor, and the red varieties, though sometimes inferior, have been in better demand than varieties superior for cooking or eating, that lacked color. Most people like a Greening apple better than a Baldwin, but because the latter has color and is quite as productive, it has had the preference. The Fall Pippin and Swaar are even better than the Greening in quality, but they are shy bearers and cannot be grown with profit without high culture and manuring. The Spitzenberg has good color, but is not a strong-growing tree and is a poor bearer, and is now not largely grown for market. One reason for defective yields and poor quality of apples is, we believe, the decrease of mineral fertilizers in the soil. The stronger and more vigorous growth of the Baldwin and Greening trees enabled their roots to gather more potash, phosphate, and other material for perfecting the fruit. But within two or three years these varieties, especially the Baldwins, have proven less reliable to produce a crop than they used to be. On the other hand, trees of the Spitzenberg variety, which were liberally manured with wood ashes and phosphate, maintained a healthy dark green foliage until fall and ripened large and finely-colored fruit. The deficiency of mineral manures is seen first in the foliage, which is easily injured by blight. Of course, wherever the foliage is destroyed, the fruit is poor or fails entirely.

We believe there is profit for farmers in New England in paying more attention to fruit growing, not merely apples but pears, plums and the smaller fruits, where there is a near market. The aim should be to grow the very best quality and depend on this to secure a paying price. The pears grown near Boston have the reputation of being the best quality grown anywhere. But if due care is given to selecting the best varieties and manuring liberally with mineral fertilizers, other localities can doubtless produce as good pears as any grown in this vicinity. The pear is a fruit which requires a good supply of phosphate. It also requires better cultivation than is usually given to apples. The pear orchard should be cultivated every year, because it is unsafe to apply the large amount of stable manure to pear trees when in grass that is needed to keep them thrifty. We can keep an apple orchard in grass and top-dress it heavily enough to offset this drain on the soil.—Country Gentleman.

COMMERCIAL GRAPE GROWING.



GRAPE growing is no exception to the rule that every industry, as it develops, is continually changing. If it is profitable, strong competition comes in, and then new and cheaper methods must be adopted. A few years ago grapes were grown in many sections and shipped to market without any particular system. This haphazard practice is still carried on in some localities, but at no profit to the producer. In 1890 grapes netted the grower 24c. per 8-lb. basket. In 1894 12½c. per basket was the average, and future prices will, in all probability, be even lower. It is, therefore, essential that perfect system and close attention to details be observed, otherwise the business will be a losing one. A vineyard must be located on high ground, free from spring frost, or a single night may destroy a year's prospects. The soil must be productive, or the yield will not be sufficient to pay expenses. On poor, sandy soils, barnyard manure has been used with good results, especially when applied in connection with wood ashes. Let the system of pruning and training be the simplest and most inexpensive. Other fruits are self-supporting; but the grape must have its trellis, which, even with cheap wire and posts, is the most costly item in the vineyard. The old plan of spur pruning must be abandoned. It leaves too much wood, and the fruit is a mass of imperfect clusters, which frequently fail to ripen properly. The Kniffen system, of four horizontal canes of the previous year's growth, has proved the most successful and is being universally adopted. Under this system the clusters are of good size and seldom fail to ripen properly. Pruning can be done more rapidly, workmen "catch on" to this method more readily and are less likely to destroy the usefulness of a vine by carelessness.

Regular and systematic cultivation is most essential to success. During spring and early summer, if a spell of wet weather comes on, the vines must be sprayed with Bordeaux mixture to prevent rot and anthracnose. It is always a good plan to spray before the buds start in spring, as this prevents mischief later on. To start a vineyard new, each acre will require the following expenditure:—

600 vines, set 8 x 9 feet	\$6 00
Plowing, fitting and setting.....	6 00
Cultivating and hoeing, 1st year	5 00
Pruning (cutting back to 2 buds)	50
Cultivating and hoeing, 2nd year	7 50
Pruning to one cane (3 to 5 feet long)	1 00
300 posts	15 00
350 lbs. wire (No. 11).....	7 00
Setting posts, wiring and tying	12 00
Cultivation and hoeing, 3rd year	10 00

\$70 00

Add to this the value of land, with interest and taxes, and you have the cost at three years. Under favorable conditions the crop the third year will pay the cost of cultivation and harvesting. With the vineyard in full bearing, a crop of 600 baskets per acre would be worth, at 12½c. per basket, \$75. Expenses out: baskets, \$12; picking, packing, etc., \$15; pruning, cultivation, spraying, repairs, etc., \$30; leaving \$18 per acre profit. The Concord seems to be the only variety that will sell in unlimited quantities. Other varieties are wanted only in a small way.—American Agriculturist.

HEALTHFULNESS OF FRUIT.



IF English people would only realize the immense importance and value of fruit as an article of diet in the early morning, we should find its appearance far more on the ordinary breakfast table, says the London Family Doctor. Of its healthfulness at this period of the day there can be no doubt whatever, and more fruit and less animal food would undoubtedly conduce to a much healthier condition of the body. In the morning there is an acid state of the secretions, and nothing is so well calculated to correct this as subacid fruits, such as peaches, apples and pears. The apple is one of the best fruits; oranges also are generally acceptable to most people, but the juice alone should be taken and not the pulp, and the same may be said of lemons and pomegranates. Tomatoes act on the liver and bowels, and strawberries, figs, raspberries, currants and blackberries may be classed among the best foods and medicines. The sugar in them is nutritious, the acid is cooling and purifying, and the seeds are laxative.

Fruits are the natural correctives for disordered digestion, but the way in which many persons eat them converts them into a curse rather than a blessing. Instead of being taken on an empty stomach, or in combination with simple grain preparations such as bread, they are frequently eaten with oily foods, or they are taken at the end of the meal, after the stomach is already full, and perhaps the whole mass of food washed down with tea, coffee, or other liquid. Fruits to do their best work should be eaten on an empty stomach or simply with bread—never with vegetables. In the morning, before the fast of the night has been broken, they are not only exceedingly refreshing, but they serve as a natural stimulus to the digestive organs. And to produce their fullest, finest effect, they should be ripe, sound, and of good quality. In our climate fresh fruit should constitute not the finishing but the beginning of the meal, particularly the breakfast, for at least six months of the year. The good effects that would follow the abundant use of fruits are often more than counterbalanced by the pernicious habit of saturating them with sugar. Very few fruits, if thoroughly ripe and at their best, require any sugar, particularly if eaten in the raw state; but it is unfortunately a fact, that what is intended and prepared for us as a great good in the matter of diet, should be transformed into exactly the reverse.

FALL PLANTING.



THE soil for strawberries should always be rich, and this is especially necessary for fall-set plants, as they can not send their roots to a great distance in search of food in the short time in which they have to grow. Old, well decomposed stable manure is excellent, and plenty of it should be used. It is well to apply it after the land is plowed, and then harrow it until the horses have stepped on every square foot. If the bed be small, the manure can be worked in with the hoe.

If commercial fertilizer is to be used—I always depend on it—it may be scattered on the surface near the plants as soon as they are set. If bone dust be used, it may be raked into the surface before planting. The soil should be made firm before the plants are set. This will insure their bearing, and will help keep them from being thrown out by the frost. If one is planting a large patch, which is seldom done in the fall, it is well to roll the soil. This not only makes the bed firm and smooth, but also enables one to see just where the surface is, and to set the plants at the proper depth. In planting a small bed my plan is to stretch the line where the row is to be and spat it down with the back of a spade. This gives a smooth surface with the impression of the line for a guide. If the soil be dry, I cover the surface around the plants with a mulch of some kind, and give one thorough watering. An excellent plan is to cut some grass when it is short and green, and scatter it all over the plants. This gives them shade just when they need it, and as the grass dries up they become strong enough to do without shade. If one is using potted plants it is a good way to have the beds prepared some days in advance, and the hole made for each plant. The holes may be filled several times with liquid manure which will soak into the soil and leave it in fine condition for the plants. In using layers it is a good plan to set them temporarily in loamy soil where they can be watered and shaded for a week. Then after a good watering they can be taken up with the soil adhering. These are as good as potted plants. If one wants potted plants without paying heavy express charges, he can accomplish it by buying layers and potting them as soon as received. They should then be placed where they can be watered and shaded as they need, until the roots reach the spot. Three-inch pots are large enough. If the roots are too long, they may be shortened. This method insures the plants against receiving any check in transplanting, which alone is enough to commend it. After plants are set they should be hoed so frequently that no crust can form on the surface, nor any weeds grow. It is a wise precaution to give fall-set plants winter protec-

tion. There is so much bare ground between them that they are liable to be heaved out. On sandy or gravelly soil where the drainage is good, there is no danger. Even on clay soil, the danger is diminished by having good surface drainage, and the soil well firmed; and also by setting the plants early enough so that they may become well established before freezing weather comes—M. CRAWFORD, Cuyahoga Falls, O.

TRANSPLANTING EVERGREENS.



I BELIEVE that autumn is a favorable time for transplanting Conifers. I may add that when the conditions are favorable, August is a better month than September, and the last half of July is quite as good as August, since nearly all Conifers finish their season's growth before the 4th of July. My first experiment in summer transplanting was made more than thirty years ago. At that time many writers were stating in the agricultural papers that June was the best month for transplanting evergreens, and even Henry Ward Beecher wrote an account of his success in transplanting at that time, although June is the worst month in the season, as Conifers are then making their most vigorous growth. We bedded out more than fifty thousand Pines, Firs and Spruces, beginning on the 5th of July and ending on the 25th of September, during which period we planted every day except Sundays. Each planter had a tin pan in which the trees stood in a puddle while he was making a trench. We placed a few branches with the leaves on around the beds so as to give the young trees a partial shade, but at the end of four days these branches were removed to the new plantings, and we found that the first plantings were throwing out new roots. Of all the trees transplanted we did not lose five per cent., except of the Pines, which were transplanted in September, and not one of the Pines which were planted after the middle of September survived the winter. Experience confirms what one would naturally suppose, that planting trees in full foliage late in autumn must be unsafe, for after the ground is cold, and the air is cold they will not throw out roots to supply the moisture which evaporates from the leaves. The trees we planted in July and August looked, on the following autumn, like trees which had been transplanted two years. We find little loss in transplanting Conifers of medium size in summer or early autumn, but our experience teaches that it is not advisable to ship Conifers when there is danger of hot or drying weather, with the chances of delay in transit and neglect at their destination.

I am satisfied by long experience that the safest period for transplanting Conifers is that from the time when the ground is settled in spring until the tree begins to make new growth—ROBERT DOUGLAS, Waukegan, Ill.

COLD STORAGE FOR FRUITS.



IN fruit growing, as in everything else, writes Judge Sitzel in the *Philadelphia Ledger*, no one can expect to succeed who does not take an interest in his business. The future of fruit growing in this country is undoubtedly bright, and while there may not be a fortune for everybody, there is pleasure, at least, for all who embark in the pursuit. One of the most important adjuncts in the raising of fruits is the cold-storage house, by means of which fruit can be kept and put on the market when it will command the best prices. The selling period can also be prolonged. On any well-managed fruit farm the cost of such a plant will soon be made from the profit. I have inspected houses that cost from \$300 to \$7,000, and as a rule the small houses are not a success. Some years ago I had drawings prepared for one that cost \$100, and the other \$7,000. The larger had a capacity of about 3,000 barrels. Of this, the outside dimension was 40 x 55 feet; the outer wall two feet deep and lined with cement. Next to this was an air space of seven inches, and inside of this a charcoal lining of four inches. The storing room was divided into six departments entered from the vestibule, through which entrance was made by the outside. These doors were always kept carefully closed to prevent a sudden change of air. Spouting was arranged between the joists to carry off the water from the melting ice. There was no ventilation in the storage-room, except what was admitted through the entrance doors. The ice chambers had two large ventilators in the roof. The ice was covered with corn fodder, or similar substance, for protection. In the construction of fruit houses it is essential to build them strong. I have found that unripe berries can be preserved in their natural state a long time in jars filled with dry sand and sawdust, and placed in the ground at a depth that would give an equal temperature. An evenly cold temperature is a reliable preventive of decay in fruit and to this is due the success of the fruit house. If pears are properly handled and put in the fruit house until the market is bare of those varieties, twice the money can be made. The same with vegetable and stone fruit. The temperature of a well-constructed fruit house and can be kept between 32 degrees and 40 degrees.

What is true of cold storage of fruits may be said about cold storage for vegetable, and milk products, as well as fresh meats. We believe that if the farmers, of a township for instance, would unite in building a farmers' cold-storage house, wherein butter and fresh meats could be stored, that it would prove such a success that the system would immediately become popular throughout the entire country. By this system, there would be no need of rushing butter or vegetables upon the market when there was a glut, but they could be held in cold storage until such a time when they could be sold to the best advantage.—Prairie Farmer.

EXPERIMENTAL FRUIT SHIPMENTS.



YEAR by year it becomes more evident that Ontario is able to produce a larger quantity of certain varieties of fruit than our markets are able to consume to the profit of the grower. Especially is this the case with the grape, which has recently been sold at a very low price in our markets. The profit upon grapes when at a cent a pound is very small, but unless some outlet opens, these low prices seem likely to rule in future for such productive varieties of ordinary quality as the Concord. Experimental shipments of grapes were made some years ago to Great Britain, by some Canadian fruit growers, but the result on that occasion was not very satisfactory, the net returns not averaging as good a price as could have been obtained at home. It would appear that the taste of the English consumers has been accustomed to grapes grown in hothouses or under the sunny skies of France or Spain, where a different class of grapes can be successfully grown from those which we ripen in Canada. On this account buyers hesitate to invest in such a distinct article from anything they have hitherto handled.

We believe, however, that could the British public learn to appreciate the refreshing and agreeable nature of our Canadian grapes, there would be a demand for all the grapes we could produce, providing we could place them in their markets in first-class condition without too great an expense. With this object in view, the Dominion government has been several times approached by representatives of the Fruit Growers' Association of Ontario, asking for legislation favorable to this end. Prof. John Craig, of the Central Experimental Farm, Ottawa, also before a committee of the House, spoke favorably of the advantages to Canadian fruit growers of opening up the British markets to our tender fruits.

Being somewhat encouraged, and hoping for success, the fruit growers of the Niagara district raised by subscription a sufficient amount of money to send a delegate, namely, Mr. E. D. Smith, of Winona, to place before the Dominion government the wishes of the growers. The Niagara District Fruit Growers' Stock Co. sent a delegate, namely, Mr. D. J. McKinnon, of Grimsby, and the Fruit Growers' Association of Ontario sent their president, Mr. M. Pettit, Winona. These delegates were received kindly, and they were assured of free cold storage on board certain steamers for a number of trial shipments of fruit, similar to that provided for butter. A grant of \$20,000 had been appropriated by the Dominion for the purpose of providing cold storage accommodation for butter, but the Minister of Agriculture promised that he will prepare compartments of the same kind for fruits, in order to make the experiments satisfactory.

The important thing now will be for Canadian growers to select some fine shipments of first-class fruit and see that they are consigned to some reliable

agent in Liverpool, who will place them in a proper manner before the English salesmen. It is hoped that such fruits as tomatoes, pears, peaches, early apples, and grapes can be exported with profit.

In view of the great importance of having the fruit properly placed on arrival in Liverpool, in order that proper sales and reliable reports may be quickly had for the future guidance of Ontario fruit growers, the Secretary wrote the Hon. John Dryden to ask if the province would assist in thus opening up a market for Ontario's tender fruits.

The Minister of Agriculture replied he was ready to aid us in our enterprise, and that in the meantime, the Ontario agent in Liverpool would be instructed to be in readiness to act in the direct interest of the Ontario fruit growers.

The question now is, when will cold storage apartments on shipboard be in readiness for the trial shipments?

MARKET GARDEN AND IRRIGATION.

My farm lies on the banks of the Little Arkansas river and from this river I get my water. I purchased a two-horse power gasoline engine and centrifugal pump and am irrigating 70 acres of my 240. I raise the water about 20 feet. My pump has a capacity of 600 gallons per minute. Gasoline costs about \$1 per day.

The water is thrown directly into the main ditches, which run along the north side of my ground. These ditches have small boxes every 50 feet provided with slides. Through the boxes the water is let into the main laterals. Smaller laterals are made with a single shovel plow. After the ditches have been made two men can take care of and distribute the water. So far I have had excellent success, but my experience is too limited to make any very definite statements.

This season I have planted 30 acres of corn, 20 of Irish potatoes, two of onions, one of a fancy variety of oats, one of beans, one of cabbage, two of tomatoes, one of mangels, 1½ acres is a bearing vineyard, and the remainder is in various vegetables. I have watered the land once this spring. The water was run between every other row except with onions; the onion rows were only 15 inches apart so the application was made between every ninth row. Everything which has been irrigated is much more thrifty and a great deal farther advanced than crops not so treated.

Next fall I will lay off the land a little differently. The ground slopes gently from north to south. The main ditch will be run along the north border. Then every 50 feet a main lateral will be run to the south line, thus dividing the area into small fields. These plats will then be watered in succession. This I believe to be a cheaper and better method than the one I am now practicing.—American Agriculturist.

WATERING THE GARDEN BY MEANS OF A WINDMILL.

Usually a garden is irrigated by running the water between every other, or every third, row. This necessitates long rows, or the water will reach the end before the ground is thoroughly wet. To obviate this trouble, C. D. Perry, a successful farmer, writes in a western agricultural report that his garden last year was made as shown in the accompanying illustration and described below. "Selecting a piece of ground 25x150 feet, I ascertained with a level the way the level lines ran. It was of no consequence which way the beds lay, or what were their shapes, I made them wide enough for two rows of vegetables, with sunken paths between. The path ran around one end of the first bed and then around the opposite end of the second, and so on until the entire plot was laid out. Now, when a stream of water two or three inches deep is turned into the path at the highest point of the garden, it will follow the path to the end of the first bed, go round it and down the next path, etc. Three inches of head and the slight fall the water gets going around the ends of the beds will carry it back and forth to the bottom of the garden, where, perhaps, the last bed is two or three feet lower than the first. By this time each bed is wet from side to side. An eight-foot windmill, with a small pond or a wooden tank holding 120 barrels, will enable every family to raise more vegetables and small fruits than it needs."

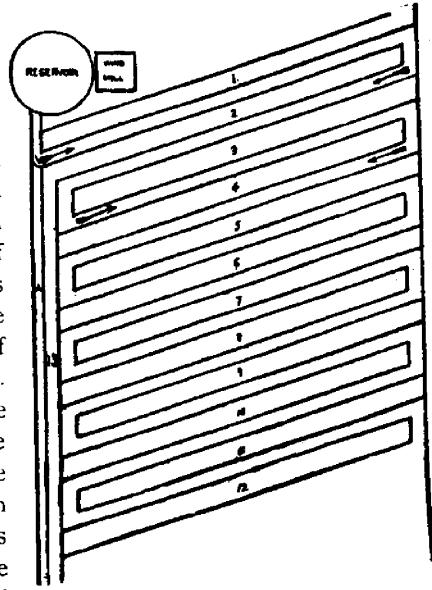


FIG. 816.—PLAN FOR IRRIGATING

Summer Pruning.—Intelligent horticulturists have almost given up trying to educate the public to put away the hatchet, saw, shears, and to a great extent the pruning knife, and do all with the finger and thumb in May and June. In the old world this knowledge is more diffused. Writing of orange culture in Italy one of our consuls says that there the object aimed at in pruning is to bring the greatest surface of the tree possible to the direct action of air and light. The spherical form is considered best. To keep this form shoots are pinched off in June each year. In the early spring weak and dead wood, and forgotten useless shoots, are cut out to let the light and air in among the branches; a sharp knife must be used.—Meehans' Monthly for July.

THE GROUND CHERRY.



WITH many farmers the ground cherry is classed among the weeds, as it grows wild in many parts of the central and western states. Its value as a fruit has not been generally appreciated, and until the past few years it was seldom seen in cultivation. An improved variety is now finding its way in our seedsmen's catalogues, and there is no doubt that it will grow rapidly in favor. With me the improved ground cherry has proven itself worthy of a place in the garden. The plant is quite hardy, and will thrive on any soil where potatoes will grow. The fruit when the husk has been removed, is a handsome yellow cherry of about three-fourths of an inch in diameter. It has something of a strawberry flavor, and is excellent for sauce, pies, or preserves. For winter use the fruit may be canned or dried. Or if kept in a cool place in its husk, the cherry will keep plump and sound until December, or later.

In growing ground cherries the same method is pursued as in growing



FIG. 817.—IMPROVED GROUND CHERRY.

tomatoes. The seeds are sown in hotbeds, and the young plants are not taken to the garden until danger of frost is past. The plants are very branching, most of the branches taking a lateral direction, almost touching the ground. For this reason they should be set not less than four feet apart each way. There is need of extra care in keeping down the weeds during the first half of the season, for later on the plants are in the way of such work. The ground cherry is wonderfully prolific. The first ripe ones are gathered about the first of August. After this the fruit may be picked every two or three days until cut off by frost. The fruit drops off as soon as it is ripe, so the most of the picking is done from the ground. On good soil one may expect to get a bushel from 18 or 20 plants, or from 130 to 150 bushels per acre.—American Agriculturist.

PACKING PEACHES.



PEACHES for market should be picked as soon as colored and before getting soft. The best pickers are young active men from 15 to 25 years of age. The best package for picking is a half bushel splint basket with strong handles, of which a sufficient number should be kept on hand, so that fruit (need not be emptied in the orchard, whereby they are much bruised) may be transported to grading room in same baskets.

Pick carefully the ripest fruit only, and go over the orchard about three times, because peaches ripen irregularly, those in the sun first, those in the shade last. If peaches are picked green or too ripe, they will not be first-class fruit, and a loss will be the consequence. Decayed fruit should be dropped to the ground, and all packages for market should be kept clean from leaves and branches. As soon as picked, transport into grading house, and make it a rule to gather, grade and ship on the same day. Grade properly into at least four different grades. We give the following table with the view of establishing a grading schedule, which will be used uniformly by shippers and merchants.

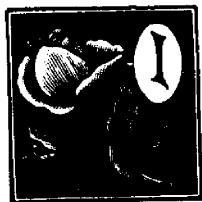
XX grade.....	Size above 2	in. diameter.
X "	"	2 in. "
A "	"	1 3/4 in. "
B "	"	1 1/2 in. "

All fruit below the C grade will be culls.

The grading must be done carefully by experienced persons. The best package for shipping is a full peck splint grape basket, which should be filled well above the rim to allow for the settling of the fruit. Mark the grade on top. Transport to destination on spring wagon with platform extending over the wheels, and with cover over fruit securely tied down to protect from dust and rain.—North Amer. Horticulturist.

✦ The Garden and Lawn. ✦

CACTUS NOTES.



IN these rough notes on Cacti, we have confined ourselves almost entirely to our own experience, thinking that the results of our successes or failures would be a better guide to other Canadian amateurs than the more scholarly treatises of specialists, but we make an exception here, the description of the class *Mammillaria* in Lewis Castle's book on Cactaceous Plants is so plain, full and accurate, that we make no apology for copying it entire: "It would be very difficult to find any plant in the whole vegetable kingdom which presents such beautiful examples of symmetry as the *Mammillarias*, and in their own family they are unique in this respect, for though many of the grotesque *Opuntias*, *Cereuses*, and *Echinocacti* possess larger and more brilliant flowers, and they are surpassed in horticultural value by the *Phyllocacti* and *Epiphyllums*, yet for delicacy of design they are unrivalled. A large number of these resemble exquisite pieces of mechanism finished with the greatest minuteness and accuracy, others, again, might be imagined to have undergone a kind of crystallisation, their whole surface being frosted over with star-like spiculæ, arranged with geometrical precision, and others appear as if covered with the finest gossamer. Strangely beautiful indeed are most of the *Mammillarias*, and in contrast with their neat rosettes or stars of spines, are the rosy yellow and white flowers, which are generally followed by small, berry-like, coral-colored fruits, that, dotted amongst the spines, add another phase to the attraction of these plants. With so much to recommend them, it is not surprising that they have become great favorites with cultivators of cacti, and with that portion of the public who have obtained any knowledge of them."

Their cultivation is similar to the other round classes: porous soil, containing some lime rubbish, and only sufficient soil to hold their roots properly, the rest being drainage; full exposure to sunlight; water sufficient in early summer, scarcely any in winter.

The *Opuntia*, commonly known as Indian Fig, has about one hundred and fifty varieties; they generally have peculiarly oval flattened branches, armed with abundant spines, very easily cultivated, rapid growers and bloomers, they have of late become much more popular, their greatest drawback being their sharp, delicate spines; the spines of most of the other classes may pierce the skin but leave nothing behind, but it is almost impossible to touch an *Opuntia* with the bare hands without receiving some of the fine hair-like spines that stay and sting, in other respects no plant can be more satisfactory, hardy, free-blooming, responding well to proper treatment, they will stand a good deal of neglect, in the southern parts of this Province about Ridgetown and Blenheim,

the common varieties live out of doors all the year and bloom profusely in summer.

Diseases of cacti are few, rot is about the only one, and is always caused by extreme cold, or over watering. Cut away all decayed parts at once, and dust with powdered charcoal and keep dry, though the shape of the plant will be ruined, you are likely to get off-shoots from the sound part. The only insect that is really troublesome is the mealy bug; for this, various insecticides are used; kerosene emulsion is effective, leave on for an hour or two, then wash with clean water, but the writer has found nothing so clean, cheap and thorough as alcohol, especially with a drop or two of fir tree oil added. With an atomizer, to be had at any druggist's, you can reach every part with a fine spray that dries



FIG. 818.

at once, nothing is wasted, but it is certain death to the insects, and no washing is necessary. Should a plant have been neglected, they may have got down to the roots, remove the plant and wash the roots thoroughly, when dry, repot; look over your plants regularly in winter, and never allow the insects to get a start.

Those, if any, who have followed these rambling remarks, hurriedly written owing to the pressure of other work, may think the instructions elaborate, and requirements many and difficult to provide, but the reverse is the case, cacti

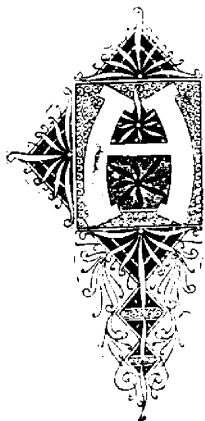
require no coddling, get them rightly started and largely let them alone, if healthy, don't repot often ; you will be surprised how much neglect they will bear, but treat them properly and they will amply repay you, though you may not understand their "speechless eloquence," you cannot avoid observing their plump, shining bodies smiling their thanks for your care, and vieing with each other how best to reward you with flowers of satiny sheen in all the colors of the rainbow—flowers in your home such as have entranced travellers in Mexico or Brazil. Readers of the HORTICULTURIST, try them, subscribe for the "Baltimore Cactus Journal," only fifty cents a year, not gotten up to make money, but by a few cactus fanciers to increase the love for, and knowledge of, these curious plants. The articles are thoroughly practical, the answers to enquiries, yours and other beginners like yourself, are just the information you need. There are few families without at least one plant or flower lover. Parents, encourage your children in this, it is a pure and elevating taste ; get them some cacti, the interest in one plant or flower soon extends to others, they will make their home brighter and more attractive to themselves and all their friends, and you will soon be ready to admit that there are few things productive of as much pleasure as being a

CACTUS CRANK.

Gladiolus.—A few years ago there was a great wave of popularity in favor of the cultivation of the gladiolus ; but during the past few years, there seems to have been a falling off, judging from the reported sales by those who deal in flower roots ; but there seems no reason why this should be. Possibly there may be objection to the fact that the ground occupied by this plant seems so bare of plants until the gladiolus itself opens in late summer. But this can be remedied by planting something else with them, so that when the latter dies away, the gladiolus can succeed them. For this reason, they are often planted with tulips, hyacinths and other spring-flowering bulbs. The gladiolus soon follows into bloom after the other plants decay. A friend of ours plants them in the spaces between rhododendrons, and they add very much to the rhododendron garden, by blooming after the other flowers fade. The bulbs can easily be taken up and preserved through the winter.—Meehans' Monthly for June.

The chief beauty of the garden should lie in its flower colors and plant forms, and not in the symmetry of its beds and borders. If our ideas of a perfect garden include any rigid geometrical principles, we would better study nature and let our ideals go ! Our ideals, at best, are extremely limited, while nature's realism is immeasurable ; she puts so much variety into her reality that she is more beautiful than we can imagine, by sheer force of quantity ! . . . We should seek to display the whiteness and purity of the lily in the garden, and not trouble ourselves so much about the brown' earth patch from which it grows.—SCHUYLER MATHEWS.

FUCHSIAS IN SUMMER.



FUCHSIA in perfection is always attractive, yet really good specimens are comparatively rare. No stunted, starved fuchsia will ever give satisfaction, and unless the plant is given rich soil, sufficient moisture and partial sunshine, it would not pay to grow it.

To those, who have seen noble specimens growing as high as eight feet, and loaded with handsome foliage and flowers, says our correspondent, W. F. Lake, in Country Gentlemen, no word is needed to convince them that they are worth the extra care necessary to attain this size, being far superior to smaller plants. In growing these large specimens, cuttings, which should be rather short shoots, may be taken off at the end of August or early in September, and as soon as they have formed roots, should be potted at first in pots not over three inches in diameter, placing them in rather a warm position for a time. When the plants have nearly filled the pots with roots, shift, using the next size larger. The main cause of "scrubby" fuchsias, is allowing them to become pot-bound in the early period of their growth, and at no time, until bloom is desired should the roots be allowed to become pot-bound.

As summer bedding plants in a shady location, fuchsias possess strong merits. If the soil be light and rich they will make surprisingly vigorous growth, and, as in the case of all bedding plants, the foliage and flowers will be decidedly improved in color and substance.

Care should be taken that the plants are not exposed to strong winds, as the fragile flowers are easily injured and the buds knocked off, or whipped about so they will be ragged or torn, if those left are open.

Watering in the dry seasons should not be overlooked, and should be applied in a thorough manner, soaking ground clear to bottom of roots.

A very interesting sort is *F. fulgens*, which is a bulbous variety, dies down in the fall and has a tuber which may be wintered as we keep gladioli and dahlias. The flowers are produced in panicles and are very slender, and from one to four inches long. This variety is started early in pots, and afterwards set in open ground, comes into bloom at a time when there is usually a scarcity of flowers in the garden, and never fails to attract attention from its peculiar shape of flowers.

Considerable interest may be derived in growing the fuchsia from seed, and watching the different characteristics of the plant as they come into flower, and in fact, during the whole period of their growth. Very good varieties may be secured from seeds taken from the fruitlike balls on your own plants, which will follow if the flowers are not picked off, the seed being found inside the reddish

purple fruit. This should be sown in boxes in heat and the seedlings pricked into thumb-pots, after they have formed the second pair of leaves. If kept growing, will usually flower the first season.

When fuchsias are forced for winter they seldom amount to anything the following summer, unless taken from the pots after they have finished, all the soil shaken off and replaced again in smaller pots in a rich soil and watered sparingly until well started again. Treated in this way, they will usually flower again in late summer or early fall, sometimes continuing up till winter very profusely.

INTRODUCTION OF THE BERMUDA LILY.



WHO can measure the pleasure given by a beautiful flower? Who deserves more grateful remembrance than one who, through love alone, brings to our fair land the choicest growths of other countries to beautify and gladden our own good homes?

The fairest of lilies—the pure Easter flower—the Bermuda lily—was first brought to America from the Island of Bermuda, in 1876, by Mrs. Thomas P. Sargent, Assistant Purchasing Agent of the Pennsylvania Railroad.

When she was leaving the island, in the spring of that year, two friends residing there gave her a few of the lily bulbs. Upon her arrival at her home she presented some of them to Mr. Robert Crawford, a near-by florist, who about a year later, sold the increase to Mr. William Harris, of Philadelphia. He began growing the bulbs and offered them to the public, with the addition of his name, as the *Lilium Harrisii*.

Mrs. Sargent was an invalid for many years. Her home in the suburbs of Philadelphia, was a centre for all that is lovely in plant growth, and her life was as beautiful and beneficent as the choice flowers with which she surrounded herself. For her loving devotion to their culture, the bountiful giving of her treasures to hospitals, flower-missions, the sick, and hosts of friends, her name should be canonized among the saints in flowers. She is now where lilies bloom as the emblem of purity. No more fitting resemblance could be chosen to keep alive her memory than in giving her name to the first flower of her adoption.—Vick's Magazine.

The Caladium as an Out-door Plant.—The beautiful caladiums with variously-colored variegated leaves, which made such a beautiful show at the Columbian Exposition, are usually regarded as solely green-house plants, and to require a very moist atmosphere at that; but they are very successful when grown in the open air, providing the soil is damp and the situation somewhat shaded from the full sun. Indeed, when the proper situation can be secured, there are few plants which will give more pleasure under open-air culture.—Mechans' Monthly for June.

FLORAL DECORATIONS FOR THE TABLE.



UT the form of decoration which demands the most taste and care is undoubtedly the adornment of the house, and specially of the dinner-table; a task which not unfrequently falls to the gardener's lot.

I have seen very beautiful table decorations which had involved but little outlay and no great profusion of flowers; while others, on which neither expense nor blossoms had been spared, were either stiff or insignificant.

White Van Throl tulips look exquisite arranged with their own leaves in small silver bowls, or in low vases of white china, especially if the table-centre be of soft silk, white, pale green, or salmon pink. Scarlet ones might be placed in rustic baskets on a ground of pale blue or cream colour.

Or again, a rather large vase of Venetian glass in the centre, filled with gold and bronze chrysanthemums loosely arranged, with fronds of some trailing form falling over the table. The other day I saw a table entirely decorated with enormous blossoms of that loveliest of Japanese Bouquet des Dames, each flower cut off short and stuck bolt upright, without a vestige of greenery in a specimen glass. One could not help thinking how much better their beauty would have been displayed had they been massed in three handsome vases down the middle of the table, and supplemented by little ferns in dainty china pots.

An ideal table in honor of a bride could be decked with ccelogyne or lily of the valley. The former should be arranged in shallow glass troughs, and if some leaves and bulbs of the plant can be spared, the flowers will look doubly well, whilst a too flat effect can be avoided by the introduction of some Lili-pitian palms. Wide bowls filled with Roman hyacinths or lily of the valley, interspersed with tall slender glasses, each containing a few sprays of the same, look very lovely; and crocuses grown in shallow tins covered with moss, are bright and pleasing.—The Gardener's Chronicle.

Something About the Baldwin Apple.—What the Bartlett is among pears, and the Concord among grapes, says the Rural, the Baldwin is among apples—especially in the North. In the South and South-west it does not succeed so well. It is now proposed to have a monument erected to its memory, at or near the place where it was first discovered, only a few miles out of Boston. The inscription on the shaft will recite that near its site “in 1793, Samuel Thompson, Esq., discovered the first Pecker apple, later named the Baldwin.” Many trees were grafted with cions from this tree, and it became well known locally. Through the influence of Col. Loami Baldwin, a celebrated engineer, it gained a wide reputation, and was afterward known by his name. It is a better monument to his memory than many a shaft of granite, or statue of bronze to more widely-known, but, perhaps, to less-deserving men.

✧ The Vegetable Garden. ✧

FORCING LETTUCE IN POTS.



THE following description of a method of forcing lettuce in pots that has been followed at the New York Agricultural Experiment Station, may be of interest to those who grow lettuce under glass, either in an amateur way or as a commercial product.

The seed is sown in flats as usual, that is to say in boxes about twelve by ten inches and three inches deep. When the plants are about two inches high they are transplanted to two-inch pots. The benches are filled with soil, in which the pots containing the lettuce are plunged so that the top of the pots are covered with about half an inch of soil.

Preparation of Soil.

Soil for lettuce should not be too heavy, and as the soil which we use for potting is a rather heavy clay loam, sand is mixed with it in preparing it for the lettuce house. The potting is composed of three parts by measure of loam, one of manure and one of sand.

The benches are six inches deep ; the lower three inches being filled with well-rotted manure, and see upper three inches with potting soil prepared as described above.



FIG. 819.—LETTUCE PLANT GROWN IN A TWO-INCH POT.

The soil in the pots is the same as that used on the bench, except that it is sifted while that on the bench is not. A little drainage material is put in the bottom of each pot. The plants are usually set on the benches about ten inches apart each way. The roots soon fill the pot and grow out into the soil of the bench through the drainage hole in the bottom of the pot. Being thus buried in the soil, the little pots do not dry out as rapidly as they would do were they exposed to the air.

The soil in the pots is sufficient to support a vigorous growth, and yet when the roots have filled the pots the plants appear to make a more compact growth and head quicker than they do when grown in beds where the extension of the root system is unchecked.

Another advantage of this method consists in the fact that the plants are transplanted but once, namely, from the flats to the pots, thus the check to the growth by a second transplanting is avoided.

Marketing.

The plants may be marketed without disturbing their roots, and for this reason they keep fresh for a longer time than do the plants whose roots are disturbed in preparing them for market. See Plate I. When the plant is ready for market it may be knocked out of the pot, and the ball of earth containing the roots undisturbed may be wrapped snugly in oiled paper. The earth will thus keep moist for a long time, and furnish moisture to the plant through the roots which are imbedded in it. Local customers may be supplied with lettuce in the pots and the pots returned after the plants are taken from them.

Grocers and other retail dealers readily appreciate the advantages of having lettuce grown in this way. It permits them to keep the lettuce on hand for a considerable length of time, and still present it to their customers crisp, fresh and attractive, instead of wilted and unattractive.

The moment a pot is removed from the bench, another may immediately be set in its place without waiting to clear the bench, or any portion of it, of the rest of the lettuce. The method thus proves economical both of time and space.

This method will undoubtedly commend itself to growers who are forcing lettuce to a limited extent. Whether it can be employed to advantage by those who have extensive houses devoted to lettuce can be decided only by trial. It certainly appears to be worthy of extended trial.

Varieties.

The variety of lettuce selected for forcing must, in general, be determined by the market demand, and it should be the aim of the grower to furnish what his market calls for, rather than what he may think he ought to have.

Summary.

The growing of lettuce in pots is believed to have several advantages over growing it in benches, namely :

1. By inducing a compact growth and favoring early heading.
2. The plants are transplanted but once, that is from the flats to the pots, so that the growth is not checked by a second transplanting.
3. Plants may be marketed without disturbing their roots, and so may be kept perfectly fresh for a long time, an advantage that is much appreciated by retail dealers.
4. As soon as a plant is removed from the bench its place may be immediately filled with another potted plant, so that the entire bench room may be kept constantly occupied.

The method may be briefly outlined as follows :

The bench, six inches deep, is half filled with well-rotted manure, over which is spread three inches of soil.

The soil is made of one part by measure of manure to three parts of rotted sod. Should the sod be from a heavy loam it is made lighter by adding one part by measure of sand to three parts of sod.

As to the care of lettuce under glass it may be said that :

The house should be kept at a cool even temperature, running a few degrees above fifty in the day, and remaining at fifty or a little below at night.

Sudden fluctuations from high to low temperature or vice versa should be avoided.

The plants should have plenty of fresh air, especially on sunny days when the temperature is high outside.

When the plants are watered overhead it is best to select a time when the foliage will dry quickly. Avoid watering so late in the day that the plants will not dry before night.

The following varieties have forced well at this Station :

Cabbage lettuce :—Big Boston, large ; Salamander ; Drumhead ; Henderson's New York, curled ; Golden Ball, dwarf ; Golden Queen, dwarf.

Varieties forming loose heads :—Grand Rapids, curled ; Hanson, curled ; New Iceberg, curled ; Prize Head, curled, tinged with reddish brown.

I suppose that everyone feels that the greatest charm of any landscape in the north is the greensward. It is the canvas upon which every artist-painter attempts to make a picture. But imagine a painter putting a glowing bed of coleuses on his canvas, for a centre-piece ! The fact is, the easiest way to spoil a good lawn is to put a flower-bed in it ; and the most effective way in which to show off flowers to the least advantage is to plant them in a bed in the greensward. Lawns should be large, free and generous, but the more they are cut up and worried with trivial effects the smaller and meaner they look.—BAILEY.

TOMATO CULTURE.

CHAPTER XIV.

PICKING AND MARKETING TOMATOES.

The gathering of the fruit is a matter of no small importance. The best of fruit is easily damaged by careless hands, handling them in a careless manner. In picking and cleaning, the less the fruit is handled the better. If the tomatoes are to be sold wholesale at a canning factory, the cheapest way is to hire them picked by the bushel. A little cracking or bruising makes but little difference when they are to be used at once. By hiring them picked by the bushel, and drawing them directly to the factory without sorting or cleaning, they can be sold considerably cheaper than when they are prepared for the general market. For market and shipping purposes, my experience is that it is most satisfactory to hire the picking done by the day or week, for the simple reason that, if let to pick by the bushel, it is almost impossible to get them picked with care. Boys from 14 to 18 years of age are good helps, but to have the work done right it is best to hire a good man and place two boys under his control, giving the boys to understand that they are to work under his direction, and giving the man to understand that he will be expected to see that the boys under his guidance are faithful and do their work properly. The trio should take three rows, with the man on the centre row. An active boy should be able to pick about as fast as a man; but if they fall behind the man should help them up, and so keep them under his eye and control all the time. The owner, however, should see that the boys are not imposed upon, or made to wheel or carry burdens too heavy for their strength.

The tomatoes should be picked and laid carefully into the picking boxes. They should never be thrown or tossed carelessly. They should then be wheeled immediately into the market shed, then be wiped clean and laid into the market boxes, or, if to be shipped, into the shipping boxes. Lay them in with the stem end down; laid in thus they carry better, and look better than if pitched in any way. Any that are cracked, bruised, or very rough, should be sorted out and sold as culls at half price, for making catsup. If they cannot be sold, feed them to pigs; they will fatten pigs much faster than potatoes. They are also valuable for feeding milch cows. When putting them up for market, have a pair of scales at hand; take the weight of the empty box, then add 28 pounds for the tomatoes and you will have half a bushel.

CHAPTER XV.

SHIPPING TOMATOES.

If the tomatoes are to be shipped, use the same boxes that are used for picking, put 25 pounds in each box and wire down the covers, and they are ready to ship. If baskets are used, the best size is 12 quarts, with hoop cover and Leno netting, to show the fruit. They should be made of elm, and well nailed; they will then carry 20 pounds. I have always found it best to put up tomatoes for shipping by weight. If they are put up in 20 or 25 pound lots, it is easy to make the even hundred pounds, and as the railroads charge by the hundred pounds for carriage, the charge on them will be less than when they are put up in various weights. My practice for expressing is to send a careful man directly to the station with the fruit, and at the same time send with the man a memorandum, with name and full address of the parties to whom the goods are shipped, also the number of packages and weight of each man's goods. The memorandum is handed to the express agent in time to have all booked. The man is instructed to watch the goods until the train arrives, and then to assist the agent to put all carefully into the car. By this means I am sure that all goods leave in first-class order.

CHAPTER XVI.

VARIETIES OF TOMATOES.

Acme—This tomato has become quite popular in some sections. It seems to be best suited to the sandy soils. It is often catalogued as Early Acme, but as far as my experience goes, it should be classed as a late variety. Color, purplish-crimson; medium size, good bearer, very smooth and handsome. Grows too much vine for very rich soils or mucky land. With me, it cracks too much for market purposes, and is subject to dry rot on the face of the fruit.

Dwarf Champion—This is a very distinct variety, recently introduced. Of dwarf, stiff habit; color, purplish-crimson; medium early and very smooth; quality, first-class; ripens evenly all over; does not crack as much as other very round varieties do. It is well adapted for small gardens and rich soil. First set fruit good size, afterward too small for market purposes. It can be set one-third closer than most varieties. With me, it does not yield much more than half the crop of some other sorts.

Canada Victor—This tomato originated with me twenty-five years ago. I sold the first seed of it to a noted seed merchant in the United States. I sent him a little of the seed for trial, and it was so much ahead of other sorts tested

with it in earliness and productiveness, that he paid me two hundred dollars for one-fourth pound of the seed. It soon became very popular, both in America and Europe. It will yield and ripen fruit better than any other variety I know of on heavy soils, where other varieties often fail. The fruit is of good size, grown in large clusters; not all smooth, but usually growing such a large crop that if all the irregular ones are thrown out there will be as many smooth ones left as most varieties yield. Color, deep red; smooth, oval shape; ripens very evenly and does not crack, and is very early. It is well adapted for forcing in frames.

Mikado—Very large and quite early. Color, same as Acme; does not ripen evenly; and with me grows too rough to be recommended for market.

Livingston's Favorite—This I think is the best of all the Livingston varieties, meeting more fully the requirements of a market variety, than most sorts. Medium early. Size above the average and holds its size well throughout the season. Mostly smooth, ripens evenly and is not subject to rot. It is very productive and a good deep red color.

Lorrillard—This tomato has been sent out as being well adapted for forcing. With me I have not found it as good for forcing as some other varieties. But I have found it one of the best late varieties I have ever tried. It is very large, very smooth and very solid, and a fine red color. Does not crack. Keeps well and is very productive. Its only drawback is that it is rather late. If it had been as early as some sorts I should have pronounced it the best tomato yet introduced.

Ignotum—This tomato is of large size and good quality. Good red color and ripens evenly. But on my soil it is quite late and does not produce a full crop. I have tried it two seasons, and with me it did not ripen more than half the crop that some other sorts did.

Mitchell's New Tomato—This new variety first sent out by me in small packets to the members of Ontario Fruit Growers' Association for trial. The report for season of 1889 from all parts of the Dominion being *very favorable* led me to sell the seed of it and also place it in the hands of some of our leading seedsmen for sale. It is of large size, averaging ten ounces each; quite a few of them will grow to weigh a pound each. It is smooth and even in shape and a fine red color. It holds its size well until the end of the season. It is the earliest large smooth variety and excellent for forcing. During the past four seasons I have grown it extensively and it has not failed every season to ripen one-third more fruit than any other sort I have tried. It does not crack and is an excellent shipper.

Vaughn's Earliest of All—Very early, probably the earliest tomato grown. It is red in color and quite productive, but it is small at first ripening, and very small after the first few pickings, besides being quite rough, so that I cannot recommend it for market purposes.

Livingston's Beauty—A nice tomato, round, smooth and of a bright crimson color, tinged with purple. It is solid and does not rot readily, a good tomato, but with me rather late and not productive enough for market.

New Peach Tomato—There are two varieties of the peach tomato, one rose color and the other lemon-yellow. They are round and about the size of a peach, very uniform in size and appearance. Fine flavor and nice to eat from the hand. Good for preserving. Medium early.

Atlantic Prize—This is one of the earliest of tomatoes and a good bearer. The first season I grew it it did remarkably well with me, yielding a large crop quite early, and I was much pleased with it, although some of the fruit was rather rough. The past two seasons it has cracked so badly that it has been unprofitable; on some soils it may prove profitable.

Early Ruby—This tomato so closely resembles the Atlantic Prize with me that I think they are closely allied, if not identical. It is early and productive but somewhat rough and cracks badly.

Brandy Wine—This new tomato, introduced by Johnson & Stakes, has been grown by me for three seasons with satisfaction. It is medium early, not quite as productive as some sorts, but it is the largest really good tomato I have ever tried. I have grown perfectly ripened fruit of it that would weigh two pounds each. The fruit is somewhat flat at the stem and ripens evenly and does not crack. It is of a good red color and mostly smooth. A bushel of them can be gathered in half the time that it would take to gather a bushel of medium sized fruit. And the saving of time in harvest is a big boon to the market gardener.

The varieties described have all been tested by me, as well as many other sorts not described that I have tried and rejected. There are also, no doubt, many good sorts that I have tested that will prove valuable. I wish it to be distinctly understood that varieties that have not been a success with me may prove valuable in different locations, and on other soils. My advice to those who grow largely for market would be to test carefully new varieties in small quantities and grow those that are best adapted to your soil and location for main crop. As a rule, those that grow a strong vine of average length will be found best adapted for light sandy soils. And those that grow short vines for soils that are strong and heavy.

St. Mary's, Ont.

S. H. MITCHELL.

ACKNOWLEDGMENT.—For the handsome sketch entitled "Summer," to be found at the end of this number, our thanks are due to Mr. George Brigden, of the Toronto Engraving Company. Mr. Brigden is rapidly pushing himself to the front among our local artists, and we wish him every success.



The Canadian Horticulturist

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✦ Notes and Comments. ✦

OUR GOOSEBERRY STATION.—On the 8th and 9th of July, Professor Hutt and the writer made a trip north into the County of Simcoe, for the purpose of visiting the gooseberry plantation of Mr. S. Spillett, of Nantyr, who has recently been appointed experimenter in that fruit. The whole country here is interesting, with Lake Simcoe in the distance, and the many hills and vales which give variety to the landscape.

Mr. Spillett has about two acres and a half devoted to his gooseberry experiments. The land is of the best character for the work in which Mr. Spillett is engaged, being mixed sandy loam and clay. He has enriched it to a remarkable degree and the size of the fruit is, in consequence, extraordinary. Mr. Spillett has some twenty varieties under test, and year by year will add to the number. He has been a public school teacher for many years, but is now retiring to devote himself more especially to experiments with fruit. We believe that the results of his experiments in gooseberries will be of great benefit to Canadian fruit growers.

APPLE INSPECTION.—It appears that the Tasmanians are more careful about the quality of their apples forwarded to Great Britain than we are. The Journal of the Council of Agriculture, published at Hobart, comes to our table regularly, and gives an instance of a man, a member of the Council, who brought to the wharf for shipment thirty cases of inferior grade apples. The inspector at the wharf refused to pass these apples. The matter was afterward discussed in the Council, and the person who attempted to ship the inferior fruit took the ground he had a perfect right to ship whatever rubbish he liked to Britain, providing he paid for its carriage. The opinion prevailed in the Council that such shipments affected the prices obtained by other shippers, and, indeed, affected the reputation of Tasmanian apples. By vote of the Council, the name of the offending member was dropped from the membership roll of the Council.

❖ Question Drawer. ❖

Frosted Raspberry Stalks.

718. SIR,—Would it be a good plan to cut back the frozen raspberry stalks ; some canes are black, some have crisp heart, but the leaves are green. If cut half down, would they likely shoot out again and fruit later on ?
A. J. COLLINS, *Listowel.*

Certainly it would be a good plan to cut off all injured portions of the raspberry plants, in order that the whole strength of the plant may be given to the healthy buds below. The result might be vigorous growth from them, and quite possibly a fair quantity of fruit.

Pruning Honey Locust Hedge.

749. SIR,—Having a triple row of Honey Locust to form a hedge—now in its third year—would like to know how and when to prune it. It is in front of a double tenement house, running from front to sidewalk as a walk between the two occupants. As it is perhaps too late to answer in the July number of the *CANADIAN HORTICULTURIST*, would you kindly answer by letter and oblige
GEORGE S. WASON, *Hawkesbury.*

Reply by Mr. John Craig, of Ottawa.

It is somewhat difficult to give a correct method of treating a hedge about which so little is known regarding the conditions surrounding it. In the first place, it is, in my opinion, a mistake to plant double or triple rows of any variety of tree with the view of thus forming a permanent and long-lived hedge. It nearly always follows in such cases that the inside branches and those on the middle row of trees are so crowded, as to make only a very weak growth, and thus to be of little service in fulfilling the purposes for which they were planted, which may be ornament or utility. In the case of the double rows, the inside branches usually fail for the same reason, viz, on account of being deprived of light, so that only half of each tree is able to perform its function normally, and thus the growth is thrown largely to the outsides. In the case of this particular hedge, and supposing it to be in a fair growing condition, I would suggest that it be trimmed back in the autumn. If it has not already been trimmed, this would be the best treatment, as cutting it back now to the desired height would probably give it too great a check. The after-trimming would consist of pruning it next spring when the season's growth is about half completed, and again about three weeks later. In the Ottawa district the Honey Locust is not reliable as a hedge plant, although its beautiful fern-like foliage renders it an attractive plant for this purpose. Occasionally we find hardy individuals of this species, but as a rule they vary so much, that it is impossible to get a hedge-row without a number of gaps in it, caused by the killing out of a percentage of more or less tender plants. It is, in good soil, a very rapid grower, and on this account it is perhaps more expensive as a hedge plant than some other varieties of slower growth, which need less pruning.

Rose Mildew.

750. SIR,—I take the liberty to enclose herewith a few rose leaves. They are losing their color and curling up just as if it were from drouth, but I think the trouble is from some parasite; if so, I shall esteem it a favor if you give me a cure. Please do not wait to reply through the HORTICULTURIST, as my bushes might be spoiled by the time the next number will be issued. General Jac. and others of my best roses seem most affected.

R. CUNNINGHAM, *Guelph.*

(Reply by Mr. John Craig, Ottawa)

Your letter of the 20th inst. is received, and with it samples of rose foliage affected with a fungous disease. I have examined these carefully, and believe the foliage to be affected with the common form of rose mildew, viz., *Sphaerotheca pannosa*. This is a very troublesome disease; especially in greenhouses, but there conditions are such that it can be controlled more completely than when the plants are grown out-of-doors. The principal remedy, and one which has been generally considered satisfactory, is to apply the fumes of sulphur; but out-of-doors this is impracticable, and I would, therefore, recommend either of the following fungicides: Copper sulphate, quarter of an ounce to five gallons of water; or ammonical copper carbonate, quarter of an ounce to five gallons of water. I would spray the plants immediately with either of these mixtures. You will probably be able to get the copper sulphate more readily than the ammonical copper carbonate. On account of the disease having such a foothold, three or four applications at intervals of five or six days will be necessary to arrest it.

* Open Letters. *

Best and Cheapest Way of Keeping Parsley Out-of-Doors During Winter.

(Answer to A. M. Wilcocks, of Richmond, Que.)

In the first place, it may be well to state that parsley is a biennial plant belonging to the botanical family of *Umbelliferae*. It, therefore, takes two years to complete its life cycle. Ordinarily, or under favorable conditions, we would expect it to live over winter, and produce its seed the second year in the same way as the parsnip and carrot. In the colder portions of Canada, however, the plant is frequently killed during the first winter, and especially is this the case when the seed is sown upon light sandy soil, but if sown on good rich loam and in such a situation as is likely to be covered by early autumn snows, and also well protected throughout the winter, it is not usually winter killed. Therefore, in sheltered gardens little protection will be needed, as a rule, to carry it through the second year. Where protection is necessary, I would suggest mulching on either sides of the rows with forest leaves or straw after the ground has become stiffened by the first frost. A frame made of boards would be of assistance and use in holding the leaves or straw near the row, and preventing it from blowing away.

JOHN CRAIG, *Horticulturist.*

The Longevity Apple.

SIR.—The original tree of the Longevity apple is, I feel confident, a seedling, and the tree is about ten inches in circumference. The fruit in the fall is very firm and the background greenish, which, towards spring, takes on a rich yellow, well covered and splashed with red. The flesh is fine-grained, rich, juicy and somewhat tart. In general appearance it somewhat resembles the Ben Davis and also Cooper's Market. Mr. Hart says it is larger than the latter and not so pouty at the blossom end. Last fall I sent two barrels of this apple to Mr. Hart, telling him they would keep until June. He put them in a cool room. About the first of May, a gentleman came in, looking for two barrels of choice apples, and Mr. Hart showed him these, asking him \$15 a barrel for them. He would not buy, but wished to see the apple, and when the barrels were opened the apples were found to be in perfect condition. About the first of June, Mr. Paul came in and saw the apples, and before he left offered Mr. Hart \$25 a barrel for either one or two barrels, which was accepted and paid.

D. YOUNG, *Adolphustown, Ont.*

Kind Words.

The twelve monthly numbers of THE CANADIAN HORTICULTURIST, bound together, make a superb volume, fit to grace the hand of the daintiest reader or a shelf in the finest library in the land. This is the official publication of the Fruit Growers' Association of Ontario, and if all its works were on a par with THE HORTICULTURIST, none would venture to dispute its claims to wider recognition and all the aid the Government can afford. A more general circulation of literature of this description would be beneficial in many ways, for a keen interest in fruit-growing, floriculture and kindred topics would be aroused and only good could follow. There are nearly 448 pages in volume xvii, and many illustrations and beautiful colored plates of fruit. Mr. Woolverton is an enthusiastic and successful fruit-grower, and under his charge THE HORTICULTURIST has grown in its proportions and usefulness.—The Globe, Sat., June 8th, 1895.

✦ Our Book Table. ✦

CATALOGUES.

PRIZE LIST, CENTRAL CANADA EXHIBITION, Ottawa, September 20-28, 1895. E. McMahon, Secretary, 26 Sparks-st., Ottawa.

WESTERN FAIR PRIZE LIST, London, Ont., September 12-21, 1895. Thomas A. Brown, Secretary, London.

CALENDAR OF QUEEN'S COLLEGE AND UNIVERSITY, Kingston, Ont., for the year 1895-'96. Chancellor, Sanford Fleming, C.E., C.M.G., LL.D.

PRICE LIST Central Exhibition, Guelph, Sept. 17, 18 and 19, 1895.

CANADA'S Great Fair and Industrial Exhibition, September 2 to 14, 1895. A credit to Toronto.

GOOSEBERRY PIE.



YOU may boast if you like of bacon and greens,
You may talk of roast turkey and game,
You may sing loud the praises of Boston baked beans,
They may all be just what they claim.
Roast beef and plum pudding may answer for some,
Or oysters in stew or in fry ;
I relish them all ; but my greatest delight
Is a big piece of gooseberry pie.

CHORUS.

For there is nothing like gooseberry pie, say I.
Oh, don't I like gooseberry pie ?
Since the time of the flood there's been nothing so good
Or so luscious as gooseberry pie.

It was my favorite lunch when toddling around,
A youngster of three years or more,
And I snuffed up the fragrance that often arose
Through the crack of the old oven door.
But now I've grown older, I love it still more,
And shall till the day that I die ;
And the one that would win my friendship must first
Fill me chuck-full of gooseberry pie.

As my teeth gently press through its lovely brown crust,
And the moisture it holds is set free,
How it strikes through my frame such a thrill of delight,
Oh, its luscious as luscious can be.
There's a girl here that's taken a fancy to me,
I can tell by the glance of her eye,
But the one that I marry must first understand
How to make a good gooseberry pie.



SUMMER

F.H. Bridgen



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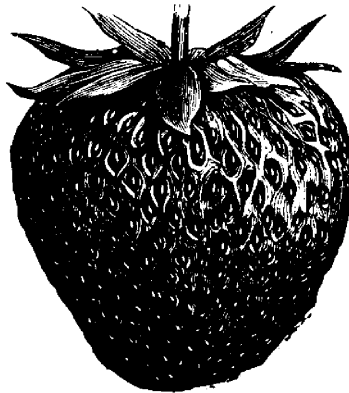
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