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MAY, 1893.



MORTICULTURIST.

ST. JOHN'S
 (REVISED)

FRUIT
 TOWERS
 DELIVERY

EDITED BY I. WOODVERTON, M.A.
 PUBLISHED BY

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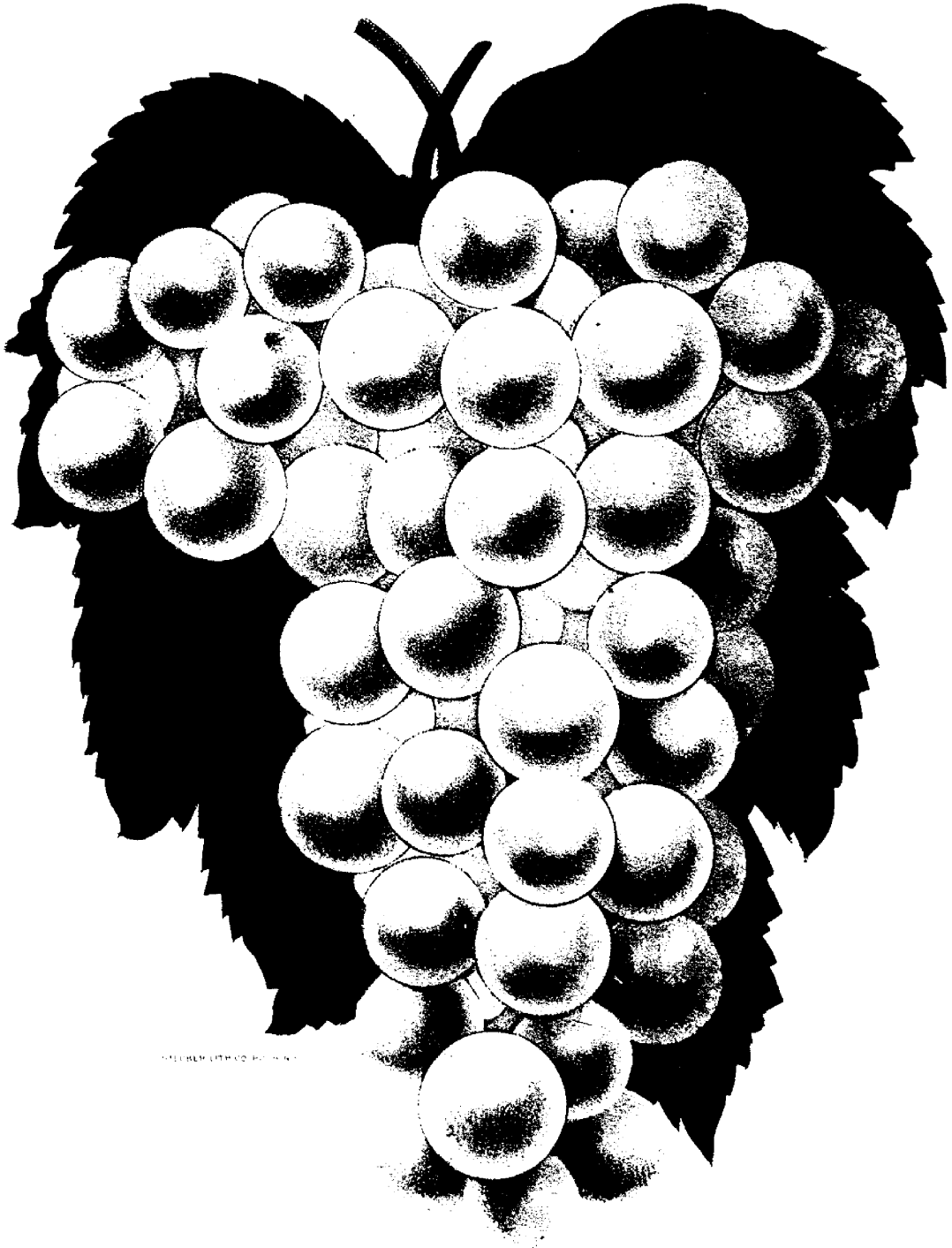
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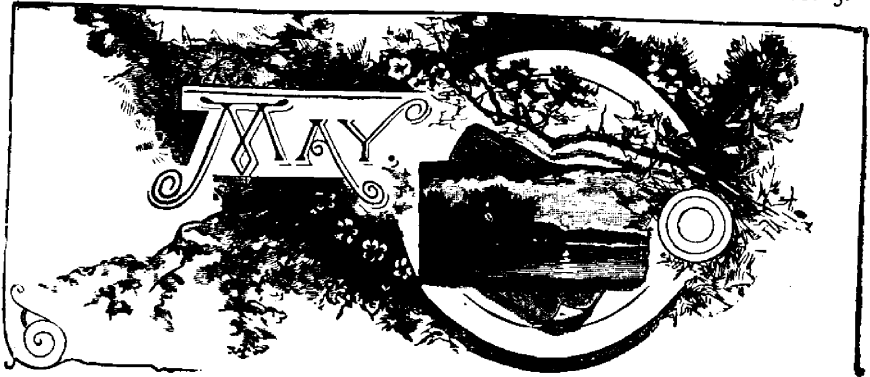
GREEN MOUNTAIN.

THE
Canadian Horticulturist

VOL. XVIII.

1895.

No. 5.



GREEN MOUNTAIN GRAPE.



P to the present time, the Lady has been considered the best early white grape; being a poor shipper and not very productive, it has never come into much favor with commercial growers.

The Green Mountain is a chance seedling discovered by a Mr. Winchell, on the slopes of the Green Mountain in Vermont, and hence is sometimes called Winchell. Indeed, this latter name is the more fitting, because it is customary to give new fruit the name of the originator or the first discoverer.

The Green Mountain is thus described in the latest edition of the *Bushberg Catalogue*: Vine, very vigorous and healthy with large foliage; no mildew; productive; fruit of very good quality; bunches of medium size, well shouldered; berries of greenish-white color, medium size; skin thin; pulp tender and sweet, with few and small seeds; flavor excellent.

In the report of the N. Y. Experiment Station for 1889, this grape is said to have ripened August 28, and the Concord on the 21st of September.

We know of no one who has given this grape a fair test in Canada as yet, but we shall be pleased to hear from anyone who may be experienced with this variety.

Dahlia and Canna bulbs should be started in boxes or hotbeds and allowed to sprout and then be divided, after which they can be potted and they will be ready for the flower beds by the middle of May. For amateurs, division of the root will more than supply their needs, as each will divide, if started in a hotbed or other warm place, into at least six good plants.—Farm and Home.

THE CULTIVATION OF STRAWBERRIES.

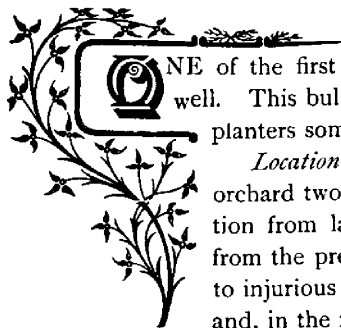


ARDEN and Forest condenses a late bulletin of the Ohio Experimental Station, on this subject, as follows: Most varieties of strawberries fruit more abundantly the second season than the first, and the berries are correspondingly smaller. For home use it is not a matter of importance as to the length of time a bed is kept, but for market there is seldom any profit in keeping a bed of any of the prolific medium-sized sorts more than one season. It usually costs less to plant a new bed than to clean out an old one, and it is much easier to keep a new bed clean. The earliest berries come from old beds, but they are smaller, and the fact that they are nurseries for insects and diseases condemns them. In treating an old bed, many practical growers mop the tops off the plants and burn over the bed when they are dry. This is the best possible way of checking rust. Straw and leaves used as mulch should be raked into the centre of the rows before burning when there is danger of injuring the plants by too great heat. After burning, the ground between the rows should be kept thoroughly worked.

Winter protection should be given, not to keep the plants from freezing, but to prevent them from heaving and to retain moisture in summer and to keep the berries clean. Early winter is the best time to apply it. Straw is objectionable because of grain and weed seeds, which it contains. The best material is marsh hay, which is free from foul seed and is not easily blown off. It is not advisable to remove this mulch in spring either to avoid early frost or to cultivate, unless the bed is very weedy.

The proper proportion of perfect and pistillate flowered sorts to plant is an open question. Varieties and seasons have, perhaps, much to do with the matter, and no definite rules can as yet be given. One of the pollen-bearing sorts in every five plants is usually sufficient, and it is well to mate the two classes as to time of blooming, color, size and firmness of fruit as nearly as possible. The most prolific sorts are found among those which have imperfect flowers, although many of this class are not prolific. The best of the imperfect-flowered varieties are better than the best perfect-flowered varieties as to prolificacy, as to freedom from disease and general reliability. Many perfect-flowered kinds bloom as freely and set as many berries as any of the other class, but they are more apt to succumb to drought and unfavorable influences—that is, they are not so likely to carry a crop through to perfection as those that bear no pollen. This fact is so well understood that the general custom is to plant as few as possible of the perfect-flowered kinds, and the numerous inquiries after reliable varieties of this class show that something better than we now have is wanting.

PLANTING AND CARING FOR YOUNG TREES IN AN APPLE ORCHARD.



ONE of the first requisites to successful orcharding is to begin well. This bulletin briefly outlines for the guidance of intending planters some of the chief points which should be considered.

Location and Exposure.—In selecting the site for an orchard two of the main things to be sought for are exemption from late spring and early autumn frosts, and shelter from the prevailing high winds. The locations least subject to injurious frosts are those bordering large bodies of water, and, in the interior, the high lands. It is important to plant apple trees on the highest land available. If the elevation is not more than ten feet above the general level of the adjacent land, it affords an advantage in allowing the cold air to drain away into the lower levels, and lessens the danger from frosts, which often do great injury when the trees are in bloom. One of the worst locations is a sheltered valley from which there is little or no atmospheric drainage, and into which the sun shining makes it the hottest spot during the day, while the cold air settling into it from the higher elevations makes it the coldest spot during the night.

A free circulation of air is very desirable in an orchard, and a full exposure is better than shutting it in too closely, yet it is advisable to have the orchard somewhat sheltered from the full force of the prevailing winds. These in most parts of the country come from the south-west. The shelter, therefore, should be on that side, and may consist of a strip of woodland, or a belt of Norway spruce put out at the same time as the orchard, or best of all, if possible, plant the orchard on a hillside having a northern or north-eastern exposure. Such a location and exposure is least subject to sudden changes of temperature, drouth and the prevailing high winds.

The Soil and its Preparation.—Apples may be successfully grown on a great variety of soils, from a moderately light sand to a heavy clay. The best soil, however, is a deep, open, clayey loam, which should be well drained either naturally or artificially. In addition to this it should be moderately rich and retentive of plant food, for it is impossible to raise good fruit on poor soil.

To prepare the land for planting it should be plowed deeply in the fall and put in good condition in the spring, as if prepared for a hoed crop. If the sub-soil is a hard clay into which the roots of the trees cannot readily enter, it should be loosened up by means of a sub-soil plow. Where it is not convenient to treat the whole ground in this way, do a strip at least five or six feet wide where each row of trees is to stand, or when planting dig the holes much wider and deeper than would be otherwise necessary for planting.

Distance Apart for Planting.—It is impossible to state any particular distance apart for planting which would be suitable for all conditions. The rule should be to allow space enough so that when the trees are full grown the tops will be a few feet apart. This allows the free admission of sunlight so necessary in producing well-colored fruit. The ultimate size of a tree will depend much upon the variety, and the soil upon which it is grown. Varieties such as the Ben Davis or Ontario, for instance, require much less room than large growing varieties such as the Greening or Baldwin, while a tree of any given variety will grow much larger or smaller than usual according as it is grown on richer or poorer soil. The best guide to intending planters is to observe the distances apart of full-grown thrifty trees in the neighborhood. These will be found to vary with different varieties in different sections all the way from twenty-five feet in the case of the smaller growing varieties to forty feet in the case of those varieties that spread. The average distance will be about thirty feet. It will be found to be better to keep them a little too far apart rather than to crowd them.

Arrangement of Trees.—There are several methods of arranging the trees in an orchard. The one usually adopted is the square; most used no doubt because many do not know of a better. By this arrangement the trees are planted in rows the same distance apart each way, four trees forming a square. A much better plan is what is known as the hexagonal. By this system fifteen per cent. more trees can be grown per acre without the least bit more crowding—no small item when we consider that the profits per acre are increased accordingly. By the hexagonal arrangement the trees in the second row are set alternating with those in the first; six trees forming a hexagon and enclosing a seventh in the centre. To ascertain the correct position for the first tree in the second row, and consequently the distance apart of the rows that way of the orchard, take two strings the same length as the distance apart at which the trees are to be planted, fasten the end of one to the first and the other to the second stake in the first row, then stretch the free ends out till they meet, this point will mark the position for the first tree in the second row.

Whichever method of arrangement is adopted the trees should be set in perfectly straight lines, the first tree, no matter which way we look, hiding every other tree in the row. Crooked rows are not only an eyesore, but during cultivation they endanger the lives of the trees as well as the morals of the man who has to cultivate them. To assist in getting the rows straight, the position of each tree should be marked by a little stake before the holes are dug. Then when planting use a "planting board." This may be five or six feet long and six inches wide, with a notch in one side at the middle, just large enough to let in the trunk of a small tree, and a hole at each end at equal distances from this notch. When a hole is to be dug place this notch about the stake and put a peg through each hole at the end. The board may then be taken up and the hole dug. When the tree is to be planted replace the board over the pegs and

place the tree in the notch. It will thus stand in the exact position as the stake which marked the hole.

Fertilization of Blossoms.—That the blossoms of a tree may “set” or become fruit, they must be fertilized with pollen from their own or some other tree. It has long been known, however, that nature abhors self-fertilization, and that she resorts to various modifications of the flower to prevent it, and thus secure if possible cross-fertilization. Bees and other insects flying from flower to flower are the chief agents in distributing the pollen and bringing about cross-fertilization.

In accord with this many varieties of apples have been found to be more or less self-sterile—that is, their pollen will not properly fertilize their own blossoms, although it may be quite potent on the blossoms of some other variety. Recent experiments conducted by the United States Department of Agriculture, have clearly shown this to be the case with many varieties of pears, and even those varieties which are self-fertile were found to bear larger fruit and more of it, when fertilized with pollen from some other variety.

Transplanting.—There is quite a diversity of opinion as to the proper time for planting trees. It may be done in either spring or fall when the tree is dormant. As a rule, however, planting in early spring is the safest in our climate.

If, when the trees arrive from the nursery, it is not convenient to plant them at once, they should be “heeled in” by placing the roots in a trench and covering them with mellow soil, well packed, to prevent their drying out. Never allow the roots to be exposed to the sun or wind any more than can be helped.

No matter how carefully a tree has been taken up, its roots are always more or less mutilated and broken. All such injured roots and broken ends should be cut back with a smooth cut to sound wood. That a newly planted tree may flourish, it is necessary that a balance should exist between the roots and tops or branches, consequently when transplanting the tops should be cut back to correspond with the roots that remain.

The hole should be cut wide enough to allow the roots to be extended freely in all directions, and deep enough, that, after a few inches of surface soil have been filled in the bottom, the tree will then stand about the same depth as it stood in the nursery. Spread the roots out carefully in their natural positions and cover them with moist, mellow surface soil. When the hole is about half filled, get in and tramp the earth firmly about the roots. Omitting to do this is one of the most frequent causes of failure in transplanting. If watering is necessary a pailful may then be added, but this is seldom necessary except in a very dry time. The balance of soil being filled in and tramped firmly, a couple of inches on top should be left loose and untramped. This acts as a natural mulch, checking the evaporation of moisture from below.

(To be continued.)

RECENT APPLE FAILURES.



BULLETIN 84, of Cornell, by Prof. L. H. Bailey, is calculated to be of much benefit to apple growers. He points out that this has been largely induced by want of cultivation, want of drainage, want of manure, and, above all, by the presence of the apple scab fungus. He proceeds to say:—"The best proof that the apple scab fungus is the immediate cause of the greater part of the apple failures of Western New York is afforded by the fact that thorough spraying with Bordeaux mixture is usually followed by a great increase in the productiveness of the orchard; and it may be said that the indifferent results which occasionally follow the spray are equal proofs that there may be other causes than the fungus, for the failures. Much of the failure with the Bordeaux mixture, however, is due to careless or hasty application. If the Bordeaux mixture is properly made—using an excess of lime—no injury may be expected to follow its use, and it should be applied with great thoroughness. The operator should endeavor to completely cover all the leaves and shoots. A mere sprinkling, such as most persons give, is of little good. One thorough application which drenches the tree, is better than several of this ordinary kind. Then people are always waiting for fair weather. Now, it is in the rainy weather that the fungi spread most seriously, and it is then that the spray is most needed. With plenty of lime, the mixture adheres well. Spray between the showers, even when the trees are wet, if you can do no better. To delay is to fail. It is better to spray in the rain than not to spray at all.

There is abundant proof that two to four applications of Bordeaux mixture are capable of keeping the fungus almost completely in check. It is not known what value there is in an application before the buds open, but it can do no harm, and it is probable that it is very serviceable in most seasons. At the latest, spraying should begin as soon as the blossoms fall. Make the Bordeaux mixture with 6 lbs. of copper sulphate, 4 lbs. (or more, if the lime is air-slacked) of lime, and about forty gallons of water. It is always advisable to use Paris green for various insects,—1 lb. to every 250 gallons of the mixture. Then take up your position near the tree, with a strong pump, and apply the mixture until the tree is soured."

Speaking of the great importance of good tillage of the orchard, the Professor says:

"Good tillage should be the first intention of the apple grower. But this can be satisfactorily given only in orchards which have been properly planted. The roots should be deep enough to allow of easy plowing, not only because the tillage may thereby be improved, but also because the roots are then in moister earth and they suffer less from dry weather. Planters frequently make the mis-

take of setting their trees too shallow. It is probably better to have them stand rather deeper in the orchard than they did in the nursery ; but whatever depth the person may design to plant them, he should make allowance for the settling of the soil. Land which has been for some years in pasture, meadow, or grain, is elevated or loosened by plowing, and it frequently requires an entire season of good tillage to compact it to its normal level. But the trees are set in the subsoil, and therefore do not settle ; and the owner may find at the end of a year or two that his trees seem to stand too high out of the ground. When setting trees on newly turned land, the planter should allow one or two inches for the settling of the soil, and thereby increase the depth of the planting.

“ Persons often tell me that they know of productive orchards standing in sod. So do I ; but this only proves that the land is unusually good. The great majority of orchards contradict this experience, and reason is against it. For myself, I should consider that I could not afford to run the risk of placing orchards permanently in sod. There are cases in which thrifty young orchards can be thrown into bearing by seeding them down, but this is only a temporary expedient, and if the land is again brought under cultivation, when the desired result is obtained, no harm will come. If the old orchard is giving satisfactory returns in sod, it would be folly to plow it up ; but if it is unprofitable, something must be done. Next to tillage, pasturing closely with sheep or hogs is the best thing which can be done ; and if the stock is fed grain, so much the better.”

In proof of the decided advantage to be gained by the application of the Bordeaux mixture, several letters from orchardists are inserted, showing the immense increase of crops gained by faithful spraying. We extract one of these letters, written by G. H. Bradley & Son, Niagara County, N. Y., as follows :

Our Duchess of Oldenburg orchard is 17 years old and has 375 trees which produced this year 900 bbls. firsts and windfalls, which netted us \$2,100. We sprayed three times with Paris green. The orchard has been cultivated and fertilized with stable manure for the last four or five years. There were almost no No. 2 apples. We picked 200 bbls. at one picking, and had only 3 bbls. of No. 2.

Our Twenty Ounce orchard yielded at the rate of \$400 per acre, treatment same as Duchess, except that it was sprayed seven times with Paris green and Bordeaux mixture. Baldwins and Kings yielded at the rate of \$150 per acre, and the quality was No. 1. They were also sprayed and manured.

Duchess sold for \$2.75 per bbl., Twenty Ounce sold for \$2.35 per bbl., Baldwins and Kings sold for \$2.00 per bbl.

PLUM CULTURE IN ANNAPOLIS VALLEY.



THE plum industry in Nova Scotia has made rapid progress during the past few years in various parts of the Province. This may be especially observed in the Annapolis Valley. This Valley has been referred to in the *HORTICULTURIST* in the past, and its natural resources as a fruit belt pointed out, showing that it is perhaps the most favorable section for apple growing in Canada, producing fruits far-famed for their fine flavor and extreme hardiness, with a continuous market in London. The Ernscliffe Gardens, shown in the accompanying cut, Fig. 765, is situated in Wolfville, N.S., and is at present the most improved garden of its kind in the Province; owned by Mr. W. C. Archibald, one of the leading horticulturists and large fruit growers of Nova Scotia. Mr. Archibald has become one of the principal factors in the Fruit Growers' Association, and through his enthusiastic and energetic work has been of invaluable assistance in raising the high standard of that Association and the establishing of the School of Horticulture.

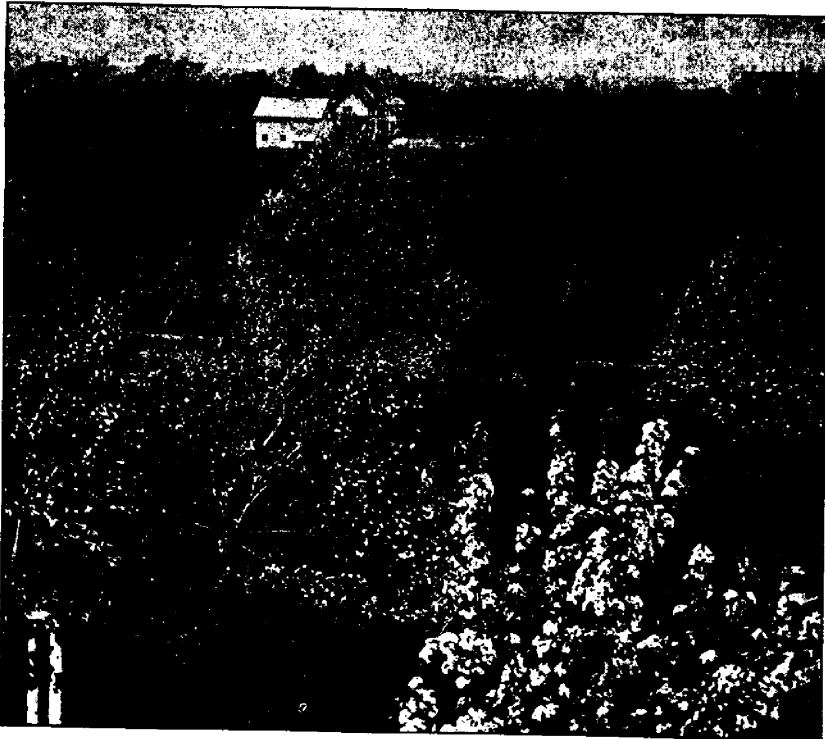


FIG. 765.—THE ERNSCLIFFE GARDENS.

The gardens referred to contain twelve acres of land, carefully laid out, with attention to landscape effect, consisting of groves of apples, pears, plums, cherries, peaches, etc., together with small fruits, illustrating the many excellent lessons to be found in extensive orcharding in which Mr. Archibauld is a staunch believer, and which he has shown to be of great value from a paying standpoint. A grove of 3,500 trees are now in bearing upon these grounds, bringing in returns during the past three years of between three and four hundred dollars per acre.

It is to these plums I would call especial attention, as certain valuable information may be taken from this part of the gardens, as many other practical problems of worth from the whole. The trees are set out eight feet apart in the row with rows the same distance, a roadway alternating every fifth row. The ground, prior to setting out the trees, was carefully subdivided, varieties of plums intermixed, and such varieties set as were determined by selection and test, planting early and late varieties. Among those varieties of the early class may be found as most desirable: The Willard, Czar, Field and Moor's Artic, ripening between the 10th of August and the 10th of September, in about the order named. Of the late plums, Monarch, Reine Claude, Peter's Yellow Gage and Grand Duke, perfecting their fruit from September 18th to October 15th. In reference to the last named plum (the Grand Duke) in the last number of the HORTICULTURIST, some doubt as to its lack of production in wood growth was advanced. In the Annapolis Valley, as far as I have observed, the Grand Duke is a very rapid grower in wood, equal to, if not in excess of, other varieties of its class. In the Ernscliffe Gardens during the past season it has made remarkable wood growth. This, together with its time of fruiting, color, firmness, keeping qualities of fruit and hardiness of tree makes it a very valuable plum for Nova Scotia. Mr. Archibauld, last season erected a cannery and canned a large number of plums. Next year he expects to set out 5,000 peach trees of the early fruiting varieties on the grounds of the Suburban Orchard, Parks and Scientific Home Garden Co., of which he is manager.

E. E. FAVILLE.

Roses should be planted in a deep, rich, well-drained soil, so that the top roots are not less than two inches below the surface, and should be severely pruned every spring before the buds start, cutting back the last growth to three or four buds, except Climbing Roses, which may first be allowed to partly cover the space desired. Old decayed branches should never remain. Every autumn, compost should be placed around the stem of the plants, and spaded into the ground the following spring. After planting, the earth should be dug up around them so as to form a small channel all around the bush; pour into this some liquid manure, mixing the earth that has to be replaced in with it. A small quantity of liquid manure given to the bushes in the manner described twice a month, will encourage growth and blossom.

TOMATO CULTURE.

CHAPTER VIII.—(*Continued.*)

PLANTING MAIN CROP AND PROTECTING FROM FROST.

The advantages claimed are as follows :

1. When the plants are set upright considerable loss often occurs by high winds breaking off the plants. When planted by my method there is no such loss.

2. The roots can be planted nearer the surface, and at the same time the stem of the plant can be buried up to where the limbs come out. The stem so buried will strike roots readily and cause the plants to grow more rapidly and yield more fruit. The roots being near the surface, and not shaded by the foliage of the plants, will get the full benefit of an extra amount of heat from the sun, which will cause them to strike new roots quickly and consequently to grow rapidly.

3. When late spring frosts occur, as they often do, the plants can be readily covered with the soil so as to make them perfectly safe from frost as follows: Raise the plants up and draw the soil under them so as to raise it about two inches above the surface. Now stand on the north side of the plant and with a hoe draw the soil carefully on the plant, covering the stem first and finishing at the top of the plant. Cover about three-fourths of an inch deep and they will be safe from the most severe spring frost that may come. If the next day continues cold and there is danger of frost the second night, the soil may be left on until the next morning, but it should never be left on longer than necessary. To uncover the plants kneel down on the north side of the plant and use both hands, one on each side, draw the soil off in the same direction in which the plant lies; shake the plant up lightly and the work is done.

Long experience has taught me that the above plan is the cheapest, safest and quickest way to protect plants from frost. If by any mishap plants are partly frozen, they will seldom yield a profitable crop. Even when not more than one-fourth of the plant is frozen, the rest of the plant will be so chilled and stunted that it will take a long time to recover. If good plants are on hand it will be best to pull out all such plants and promptly replace with others.

CHAPTER IX.

AFTER CULTIVATION OF MAIN CROP.

As soon as the weeds can be seen springing through, take a good one-horse cultivator, set it wide and go through them once a week, or oftener if required.

Cultivate about three inches deep the first time, and an inch deeper and a little narrower each time afterward. Use the hand hoe freely between the plants, keeping them perfectly free from weeds. After cultivating them three or four times over put the small moulding steels on the cultivator and throw a moderate quantity of soil close up to the plants. The soil should be drawn in around the plants with the hand hoe. Repeat the operation after a week or ten days. The earth around the plants when finished should be two or three inches higher than the centre between the rows, and the hills should be broad and rather flat. Be careful not to hill them too heavy or make the hills sharp. Just before the vines get so close together as to be in the way, set the cultivator teeth pretty close, about eighteen or twenty inches apart (without the moulding steels) and cultivate the centres of the rows seven or eight inches in width perfectly soft and mellow. This last cultivating will save the plants from suffering from the drouth in very hot weather. When the plants lack moisture at the roots and the weather is very hot, a dry rot affects the fruit on the face. I may say here that, in my experience, I have found that clear red tomatoes are more free from rot than those of other colors. If manure enough could not be obtained before setting the plants, use about two tablespoons of nitrate of soda ; scatter it directly over the roots of the plants just before drawing the earth around them. Or a large handful of unleached ashes, used in the same way, will be found a good dressing for them. This will give the plants a vigorous start, and help them to be more fruitful.

(To be continued.)

S. H. MITCHELL.

St. Mary's, Ont.

Underground Irrigation is often more useful than water applied on the surface, for small fruits and forced vegetables, especially the strawberry when the plants are developing fruit. The sinking of empty flowerpots here

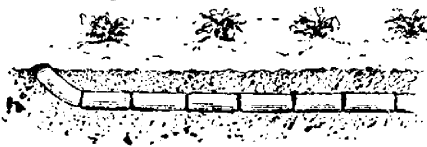


FIG. 766.—TILE SUB-IRRIGATION.

and there through the plot, and keeping these filled with water, which gradually soaks out into the surrounding ground, may answer for a small plot of berries, but for a larger area the plan suggested in the accompanying illustration will be found more serviceable. Between every second row of plants is laid, a few inches below the surface, a row of drain tiles, the first one in each row coming to the surface. With a hose each row of tile can be filled in a moment, and the water will be absorbed by the earth and reach the roots of the plants as needed, and there will be no baking of the surface soil. If desired, the first row of tile could be extended around through the various rows, and the whole filled from one point. A modification of this idea is used with many other crops.—American Agriculturist.

STRAWBERRIES.



It took me ten years to learn to grow strawberries, so that a good crop of fine berries could be depended on with reasonable certainty every year. The three principal reasons were varieties not suited to my soil, lack of potash in the ground, and allowing the plants to stand too thick. Of a good many varieties tested thus far, the best four, all things considered, are Jessie, Haverland, Bubach No. 5, and Sharpless, in the order named. Our strawberries, following a crop that has been grown on a well-manured clover soil, need no fertilizer except potash, and this is supplied by a moderate dressing of unleached wood ashes. The plants are set in April, just after growth has begun, in rows four feet apart, and two feet in the row for vigorous growing varieties, and eighteen inches for those that do not throw out many runners. My experience is that to produce the finest berries, the plants in the matted row should be six to eight inches apart. Not one farmer in a hundred will take the pains to thin them, and I am not that one, but I can approximate to these distances by thin planting. The past season being so extremely dry just at the time the sets should be forming, we failed to get a good stand of plants. But this is the first time it has occurred, and we shall not abandon the thin planting just at present.

Before setting, the ends of the roots are taken off by a slanting cut with a sharp knife. All dead leaves are picked off. The most satisfactory method of planting we have ever tried is to stretch a line lengthwise of the plat, one man sinks a spade near the line at an angle of about forty-five degrees, and raises the handle nearly straight up, while another straightens out the roots, dips them in water, and puts the plant behind the spade in a natural position, with the crown a very little below the surface. The first then withdraws the spade, and firms the ground by treading firmly just in front of the plant. As a rule, not more than one plant out of four or five hundred fails to grow. Almost immediately the cultivator (with narrow steels) is started, and the whole of the surface is stirred every time we cultivate the garden or after every rain. No fruit is allowed to set the first season, and the runners are kept off until about the first of July. Sets are then allowed to root in a row about two feet wide, care being taken to always pass with the cultivator the same way so as not to disturb the young plants.

I have never heard of clover straw or haulm being used for the winter mulch, but find it an excellent thing for this purpose. The broken straw and chaff sifts down among the plants, and the coarse straw above serves to shade them and hold the snow. In spring, the coarse straw only is raked off and the rest is allowed to remain on the rows to hold the moisture and keep the berries clean. We hire all the berries picked and sell nearly all of them direct to

consumers, there being a splendid demand for them right at home from passers-by, from wealthy farmers in the neighborhood, and callers from villages near by. Then we are nearly always behind orders from rich people in our county seat, who are willing to pay a good price for something that exactly suits them. These are sent in every morning by U. S. mail hack. But we make it a religious duty to eat all of the best we can at home.

Besides these two acres used in rotation of garden strawberries and clover, we have about an acre of other fruits, raspberries, blackberries, currants, gooseberries and grapes. These three acres are what make life on the farm pleasant and attractive, besides each year they bring in a sum of money that is not to be despised. Since we have learned how to manage them, they do not cause us much worry nor require any great amount of labor. If we were compelled to go back to the old way, and were denied the pleasure and the profit of these three acres, I think that I wouldn't live on the farm at all.—Practical Farmer.

APPLE-TREE BORERS.

A writer in *Farm and Home* says: "For many years I have practised each season, washing my apple trees to secure against the attacks of the tree borers and bark or scale lice, all of which enemies of the apple tree are very widely distributed through the country and no less harmful. I have found that the same specific, applied at the same time, is equally efficient against all the enemies—*Saperda Candida*, *Chrysobothris femorata*, and *Mytilaspis pomocorticis*—it goes without saying that we cannot afford to neglect so valuable a remedy. June is the month when the lice hatch, and when the several borers lay their eggs. Hence June is the month to apply the remedy. I always make the application the first week of June, and have some years repeated it the first week of July. I used to use soft-soap, either clear or slightly diluted with water. In this way I kept my trees almost wholly free from the insects, while neighboring trees not treated suffered seriously. Late years I have modified the substance by adding crude carbolic acid. I boil one quart of soft-soap in two gallons of water, and while still hot thoroughly stir in one pint of the acid. This is no better than the soap, only as I have thought it might retain its virtue longer, and so be more efficient in case only one application is to be made. In the use of this, however, we must not touch the foliage or we will destroy it.

To make the application I roll up my sleeves and by the use of a cloth thoroughly scrub the trunks and main branches of the trees. In this way it takes but a short time to treat an orchard. If any one objects to this hand-to-hand combat he can take a common shoe-brush with a handle, and thus do quick and thorough work. I do not believe any one can afford to neglect this treatment, especially in orchards which are young or just planted.

CULTIVATION AND CARE OF THE FRUIT GARDEN.



AFTER fruit trees have been planted they should be thoroughly and frequently cultivated. In short, the fruit garden should be worked in much the same way as the farmer works his corn or potatoes when he desires an extra fine crop. The trees should be cultivated for four or five years, when after this time the ground may be seeded in clover, but the small fruits must be cultivated every season, early and late, and the ground kept entirely free from weeds, if good crops are desired. While trees and bushes are small, the ground between the rows may very profitably be occupied by summer crops of vegetables, as potatoes, cabbage, or sweet corn, the only precaution to be remembered being to replace with fertilizer all which such crops may extract from the soil.

The best plan of pruning trees is to remove a branch whenever it is seen to be out of place or to be crowding others. The earlier this is done the better, as it will produce less injury to the tree. There is probably not much difference as to the time when a regular pruning is given the orchard. Some prefer the spring to the autumn or winter. Possibly the early spring is the safest time for this work. Pear trees need very little pruning, and cherry trees do not endure severe pruning. Suckers must be carefully removed from the apple trees. Peach trees may have from one-third to one-half of each year's growth removed with profit every spring. Peach trees, like grape vines, stand a good deal of pruning, and are benefited by it. Raspberries, blackberries, gooseberries and currants all do best when thoroughly pruned. Stakes are unnecessary for any of these bushes if the young shoots are cut off when they reach the height of two or three feet. Extra fine crops are to be secured only through a liberal use of the pruning knife. The soil in the fruit garden should be fairly good before the trees have been set. Afterward stable manures should not be used in large quantities, except on the berry bushes. Wood ashes, bone dust, and the salts of potassium will give the best results applied to grapes, apples, pears, peaches and plums. These plants are little benefited by stable manure, as wood is produced at the expense of fruit.

Many persons do not grow fruit on their farms, thinking that it is no longer possible to control the ravages of insect pests. In this they are mistaken, for at present almost every form of insect may be quite perfectly controlled. The fruit trees should be examined every spring for the eggs of caterpillars, and then by scraping the earth away for a few inches around the trunk of each tree, search should be made for borers. If the ground is kept loose and free from weeds about the trunks of trees, and heaped up three or four inches at the base of each trunk, there is usually very little trouble from borers. The currant worm is easily combated by dusting both the currant and gooseberry bushes

with powdered hellebore. This substance destroys the worms completely, and is not poisonous to human beings. For the curculio and the codlin moth, the best treatment is to spray the trees just after the blossoms fall in the spring, and two or three times subsequently during the growing season. In this way these pests can be kept in control. Some growers still practice jarring the insects off the trees upon sheets spread upon the ground to receive them.—American Agriculturist.

Early Vegetables.—If one has any means for forwarding his vegetable plants, he can do much to hasten his crops. Not many farm-gardeners make use of hot-beds or cold-frames, yet these, by starting their plants in window boxes, can gain some weeks in earliness over those who sow their seeds in the open air. Vegetable seeds are hardy and tender. Those of the hardy class may be sown this month, while the tender kinds cannot be safely sown until the time to plant Indian corn. The vegetables belonging to the hardy class, usually cultivated in family gardens, are : beet, carrot, cabbage, lettuce, onions, parsnip, parsley, peas, radish, turnip and spinach. The seeds of any of these may be sown in the open garden as soon as the soil is dry enough to be worked. Of course, some of these, especially cabbage and lettuce, are had much earlier by raising the plants under glass and setting out the young plants at the time that seeds are sown in the open ground. By the use of window boxes, one can raise all the plants usually needed in the family garden. Such plants may be purchased, but raising them is cheaper. One who takes pride in his garden will avail himself of whatever means that will allow him to be a little ahead of his neighbors.—American Agriculturist for April.

The Gooseberry.—There are few, if any, varieties of fruit that are more readily propagated than this, and when in addition it is considered that it is easy to cultivate, fruits early, and if given anything like good treatment can be kept bearing fruit for a number of years without replanting, it is evident that in a majority of cases this variety of fruit does not receive the attention that it should. In a majority of cases the plants are set in out-of-the-way corners of the garden, and are allowed to grow with little or no cultivation or pruning. In consequence the results are rarely satisfactory. So with all small fruits. The most convenient way of planting is in rows sufficiently apart to admit of giving the necessary cultivation with the horse cultivator, then sufficient cultivation to keep the weeds down and the soil in a good tilth at least during the early part of the season. With gooseberries more than with any other class of small fruit, good pruning is necessary. Allowing too close a growth favors mildew. The weaker canes should be cut out in sufficient quantity to admit the air and sunlight through the bushes, leaving only a reasonable amount of thrifty young canes to bear fruit. If this is done a good crop is almost certain annually, as no class of fruit is as certain of bearing if good treatment is given.

UNFERMENTED WINE: ITS VALUE AND USES AS A BEVERAGE.



DOUTBLESS, like myself and many others, you have noted with pleasure and approval the sentiments expressed in the *Hamilton Templar and Spectator*, as well as other leading papers of the country, on the question of unfermented wine or grape juice, and its use as a beverage by total abstainers.

The *Templar* shows its aggressiveness by taking this advanced step on this question, being the first temperance paper to voluntarily open up the discussion and advocate its use, by an editorial, in its issue of January 4th.

The object being to correct a widely prevailing and erroneous sentiment amongst temperance people, that in order to fully obey the divine injunction to "avoid all appearance of evil" in its application to the question of total abstinence, we must, to be safe, refrain from the use of the harmless and healthful juice of the grape, even though preserved fresh from the press by process of canning, as practised in canning fruit.

The *Spectator* says, in its editorial following, that the *Templar* is right, and that it is only the unco gude who hold that the total abstainer's pledge should restrict from the use of cider, etc., fresh from the press, as alcoholic fermentation commences the instant the apple is ground, and that no loophole should be left open for the person pledged, "in a moment of weakness" to thus be led astray and finally back to the gutter.

Let us unhesitatingly say that such sentiment is, in the least, not in harmony with the true facts of the case. If so, we break our pledge every time we make use of sauce, or canned fruit, or eat bread, fermentation having set in; but by the operation of heat applied, under certain conditions, fermentation is stopped and the article is still in a proper state for food or drink, as the case may be.

As practical fruit growers, this question, under recent experiments and developments in the preparation of fruit juices, especially of the apple and grape, becomes of vital interest to us, not only financially, but from the standpoint of temperance and prohibition, and therefore, indirectly, of morality and virtue.

Allow me to say that, having in the past taken considerable interest in the matter, and having experimented along this line, and, with the valuable work done by Prof. Craig, of Ottawa, in the fall of 1893, who kindly put up sixteen samples of unfermented grape juice from thoroughly ripened Concord from my own vineyard, each sample put up under different conditions and formulæ; some of them which he sent me this last fall were very fine indeed, especially one with $1\frac{1}{4}$ lbs. sugar to the gallon and heated only to 160° Fah, and then immediately sealed.

We have tried this again this fall and find it the nearest the natural flavor of the grape of any we ever tasted. It also keeps well and makes a delicious and refreshing, invigorating as well as harmless beverage. We also put up a quantity at a temperature of 180°, but find it poorer in flavor, as any greater heat than the lowest necessary to preserve it from fermentation rapidly draws off the flavoring material, which is chiefly ether and is very volatile.

The sample put up at 160 degrees should, if put up carefully, find a ready market and be profitable at a price within the reach of the masses, and should make a way open for the sale of all the grapes that can be grown in this country, and should take the place of all fermented or distilled liquors as a beverage and make the way easy for the enforcement of a prohibitory liquor law.

As to the beneficial results of its use, we can say that we have used it in the harvest field and when our men were performing the heaviest labor under the most trying conditions of extreme heat, which produces exhaustion and have found that they were fitted to perform half more than the ordinary day's work with the use of only pure water as a drink. The results of its use being a remarkable degree of freedom from fatigue, thirst and hunger, it being in itself food, drink and strength. Our method of its use is to add about one-quarter to a given quantity of water, when using largely while at heavy labor.

Again, allow me to say, concerning the samples sent us by Prof. Craig, that of one preserved in its fresh state by the use of salicylic acid, when first opened, we found it still more natural in flavor than that preserved by heat at 160°, but after standing a few days exposed to the air, it became very unpalatable, even though it did not ferment in the least; but as the use of this drug is condemned by the British authorities as tending to produce unhealthy conditions of the kidneys, it cannot be safely used as a preservative.

Another fact, concerning the quality of fruit grown on different soils, comes to light by the use of the lactometer, an instrument which tells the amount of sugar per gallon in the juice of the grape. The grapes grown on the heavier soils showing much more sugar in their composition, thus proving their greater relative value as compared with those grown on cold sandy loams, and hence should bring a proportionate higher price. Would not an inspection of grapes in this particular prove just to the growers, as well as to the consumer.

The lactometer enables the manufacturer to make a standard article of all well ripened grapes, by first finding the amount of sugar in the grape, and then adding sugar to bring it up to the right standard.

A report from Prof. Craig, with his opinion of it, would be valuable information. Hoping to hear more of this matter through your columns, I remain your humble servant,

Fruitsland.

JOSEPH TWEDDLE.

NECESSITY OF FEEDING TREES AS CAREFULLY AS THE STOCK.



AM no chemist. My knowledge of fruit culture and the manures suitable thereto is purely empirical, or as we like to say, practical, writes O. W. Blacknall in the Connecticut Farmer. It is founded on the careful experiments and observation of near twenty-one years. Long before I knew anything about the properties of plant food I noticed that some fruit trees and grape vines on the place bore abundantly of fine fruit, while others bore none, or had the fruit to rot on the trees. This puzzled me a good deal, for there was apparently but little difference in the quality of the soil, all of it being fairly good, and the other conditions seemed the same. After some years I discovered what made the difference. The trees that bore the best fruit, the most of it, and rarely failed, were the trees that were from choice well supplied with potash. This set me to thinking and inquiring. They told that kainit was the great and economical source of potash. I bought it and applied it attentively to peaches, apples and grapes; first to only a few trees at the rate of two or three hundred pounds to the acre, which amount I have since much increased. On sandy soil I find that it is needed in larger quantities than elsewhere, though it pays well on all soils that I have tried it on.

I use from five to six hundred pounds per acre, with three hundred pounds ground bone. I am a great believer in kainit for fruit, not only as a manure, but as a preventive of disease and destructive insects. While it cannot take the place of spraying for peaches and grapes, it gives the trees and vines so much vigor as to enable them largely to resist the tendency to disease which often lays them open to the attack of parasites.

There is a peach orchard here which, excepting in the great freeze of 1894, has not in many years failed to bear quantities of the most superb Amsdem June peaches; while other orchards fail two years out of three, that has hit every year, with the one exception named. The owner is a believer in feeding his trees as well and carefully as his stock. He uses ground bone and kainit freely, but no ammonia except occasionally turning under a crop of cowpea vines.

For eleven years I have been largely engaged in strawberry culture, having now in about seventy-five acres. Here I use the dissolved bone, instead of bone dust, as the former is quicker in its action, as suits the needs of this crop. I find that six to seven hundred pounds per acre pays me well. Kainit or muriate of potash I find even more necessary on strawberries, blackberries and raspberries. It not only makes large and fine crops of berries, but also lessens the tendency to rust and blight. On some lots I could not plant strawberries at all for the ravages of white grub, did I not use kainit regularly. It drives them away, and also the cut worm, which is sometimes a ruinous pest. I use six hundred to eight hundred pounds kainit, or three hundred to five hundred pounds muriate of potash per acre, with six hundred pounds dissolve bone, and

two hundred to five hundred pounds nitrate of soda, or four hundred to eight hundred pounds of cottonseed meal in place of the nitrate. I apply half broadcast before crop is planted, half the remainder in November, as top-dressing over plants, and the rest in the same way the following March.

I find the potash in the ka nit and muriate of potash not only valuable, but indispensable. It not only makes heavy crops of berries, but gives my plants—of which I sell millions annually—a vigor and stockiness not to be had otherwise.

SMALL BERRY PLANTATIONS.



N talking with many of the most extensive berry growers in the world, they have almost without an exception told me that after all had been summed up, there was not much clear profit left. One man, who had grown hundreds of acres of strawberries, acknowledged upon being closely questioned, that had he grown ten acres, and been able to give them close personal attention and high culture, he would have had less worry and responsibility and more profit in the end.

The big markets are where the gluts occur, and the consequent losses to the growers and shippers. My experience has taught me that, as a rule, the nearer home they are sold the better. Berries are very perishable; hence the need of haste in getting them to the consumer. The greater the distance between the producer and consumer, the more expense and danger of loss. If one is growing largely it becomes almost impossible to avoid shipping to the big markets in order to get rid of the crop promptly. When the berries are put upon the cars or boat they are beyond the owner's control; he must take what he can get for them, and this is often less than he could have gotten at home. He is certain of one thing, that he will have the freight and commission to pay.

There are thousands of berry growers all over the country, and others who might join their number, who can earn comfortable incomes by selling direct to the consumers in the small towns. There are many who do this now, but the business might be largely increased. Indeed, many of their country neighbors are too short-sighted or negligent to grow their own home supply. There is not one family in ten, even among those who live in the country, that is half supplied with berries. Most of them are glad to buy at least a few, and they will often come and get them, thus saving the cost of delivery. I have often started to town with berries, but before I could get there, people along the road would have bought the most of them.

No doubt the world needs big fruit farms, but it is the small ones that pay the best in money as well as satisfaction. It is not the amount of gross sales that count at the end of the season, but the net proceeds. It is rarely possible to give a very large planting the same degree of high culture that may be given a small one. Therefore, let the large growers be less sanguine and the small ones take courage.—H. E. VAN DEMAN in Smith's Fruit Farmer.

HOMEMADE COUNTRY GREENHOUSE.



AM a farmer's son, but have never been strong enough to do ordinary farm work. Several years ago I began raising a few plants for sale. When the fact became noised abroad, people came from far and near to buy. I had no conveniences excepting sitting-room windows and a few small frames covered with old window sashes. But father came to my rescue, and built a small greenhouse. We have two now, and expect to build another early in the spring, as the indications are that we would not be able to supply the demand for plants this season with our two houses, one 32-ft. long, the other 40-ft., and three large frames covered with 13 hotbed sashes. Our buildings are homemade, much as any farmer could build who is at all handy with tools. The material is almost wholly scantling 2x4 inch and boards. The buildings are double boarded with paper between. We buy the windows and roof sashes, the latter being 3x6 ft.

The house illustrated is my sleeping room at night and my sitting room and work room by day. The posts or studding along the front side are 2x4 inches, 6 ft. high, and set just far enough apart to allow the windows to come between,

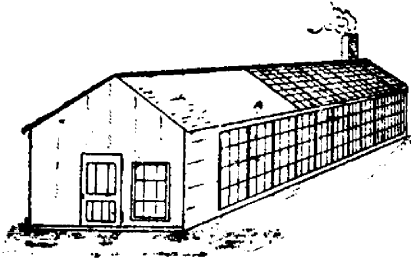


FIG. 767.—WHERE SEEDLINGS AND CUT FLOWERS THRIVE.

so no window casings are used. The house is 32 ft. long and 10 ft. wide. It is heated with a 2½ ft. box stove that takes in very coarse wood. The stovepipe runs along the back or north side of the building behind the staging that is under the roof windows. This is not the best method of heating, but will do for those who have not the means to get something better, and I think this building suits my purpose

better than if it were built and heated in the usual way, as the benches would then be at an even height and the temperature would not vary so much in different parts of the building to suit a variety of plants.

On the lower shelves I have pansies, English daisies, and a few roses in pails, the pails resting on the floor close against the bottoms of the windows. Higher up, on shelves which go along the middle of the windows, I have a variety of geraniums and other plants that do not need to be kept very warm, while still higher upon the staging under the roof glass, which is built like a stairway, I have coleus, heliotrope, pinks, more geraniums, etc. There is an east and a north window not shown in the cut. For ventilation, any of the windows may be raised, but as this causes the cold outside air to strike directly on the plants if the south and west windows are open, I generally ventilate sufficiently by the door which is in the west end and the east and

north windows which contain no plants. A great many seedlings are started in this building to be transplanted and moved to other quarters later. In addition to the plant trade, I sell a great many cut flowers in summer to city boarders.—W. F. HEATH, N.H., in *Forest and Home*.

Apple Pomace as Ensilage.—That apple pomace is of value as a stock food is clearly shown in P. B. 29 or the N. H. experiment station. J. W. Pierce siloed apple pomace in alternate layers with oat straw, the pomace being two inches and the straw one inch thick, and when pressed the whole forming a compact mass like a section of cheese. It was wholesome, clean to handle and with a fruity odor. Its chemical composition compared favorably with corn ensilage and was wholly digestible. Milch cows ate it without shrinking in milk yield, and it was apparently of the same value as corn ensilage when fed at the rate of ten pounds per day per head. Mr. Pierce says that a mixture of pomace and straw fed five pounds per day, with hay, cottonseed and bran, produced nearly double the quantity of milk obtained on a ration of hay and corn meal.

The table below gives the composition of apple pomace ensilage, pomace and oat straw, and of corn ensilage, taken from the silo in March.

	Apple pomace ensilage.		Pomace and oat straw ensilage.		Corn ensilage.
Water	82.03	....	75.14	....	80.66
Ash . . . . .	.91	....	1.27	....	1.39
Crude protein	1.45	....	1.51	....	1.54
Crude fibre	4.13	....	6.82	....	5.14
Nitrogen free extract . . .	10.67	....	13.98	....	10.74
Fats . . . . .	.81	....	1.28	....	.53

—Farm and Home.

Galls on Raspberry and Blackberry Canes frequently extend clear around and make the canes double their usual size, and cause a lingering death before the fruit ripens. The next spring a grub is found in the swelling, which later develops into the water beetle that lays its eggs in the early summer on the canes. These eggs hatch, and the young larvæ working into the cane check the flow of sap, which causes the galls. It is far more abundant in the western than in the eastern states, though it may be new in some localities, and may destroy half the crop. As with all insects, there are occasional years when this pest becomes very abundant, followed by years when they are not so injurious. The only remedy known is to cut and burn the infected canes before the larvæ leave the galls in spring. This is very effective if persistently followed up.—PROF. S. B. GREEN, Minn. Experiment Station.

A WHEEL LAND MEASURE.

A device for accurately measuring off any piece of level land is given here with. An old wheel from some cast-off buggy or other vehicle is required, and may be of any convenient size. Make and fix the handles as shown, so that the wheel may revolve easily on its axis. To use the device, mark one spoke with a strip of cloth or a dab of white paint, and roll the wheel carefully along the desired boundary with a stake or other object as a guide for the eye. Count the number of revolutions the wheel makes as the distance is traversed by the wheel, and by multiplying the number of these revolutions by the circumference of the wheel, the length in feet may be found. To get the circumference, the wheel may be measured with a tape-line or string—Farm and Home.

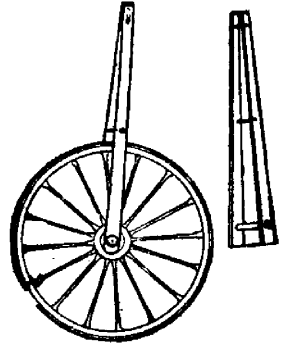


FIG. 768.

ABOUT CULTIVATING ORCHARDS.

The diverse treatment which orchards receive throughout the country affords a lesson showing the great benefit of giving them the best management and the loss from neglected treatment. Neglect is too common, and poor crops and scabby fruit is the result. In contrast with these neglected orchards, are a few to which the owners give the best attention, and who receive good prices for the copious returns of handsome fruit. One orchard of this class, which has grown to full bearing size, affords the owner a handsome profit every year, while his careless neighbors receive not more than one-fourth of his returns. This well managed orchard is kept in grass, which is grazed short by sheep, the grass afforded them being only one-half or two-thirds as much as would give them full feed, the deficiency being made up with grain or meal. This is fed to them regularly in long board troughs. The sheep eat every wormy apple as it falls, and the fruit is thus kept nearly clear from insects. The droppings of the sheep enrich the ground, and a top dressing of barn manure is added yearly. The sales of the fruit from this orchard for many years have been equal to one hundred dollars from each acre it occupies. The shade of the apple trees prevents a rank growth of the grass, and the grazing of the sheep gives it somewhat the appearance of a lawn. The owners of some other excellent orchards, who cannot use sheep, apply yard or barn manure more copiously. In one of the finest visited, the annual application of manure had gradually made it two or three inches deep; the result was a superb crop of apples. Other orchards, with less manure are kept clean and mellow with a gang plow or Acme harrow, to keep the surface clean and in a finely pulverized condition.—Country Gentleman.

CACTUS TALKS.

In commencing our Cactus chats we may presume that in order to understand the care of any plant, it is of advantage to know what its natural habitat is, and under what conditions it thrives and blooms in a state of nature. All Cacti are natives of the warmer portions of the American continent, only one variety, "Rhipsalis," has been found a native of the old world. "Opuntias" have become naturalized there, but all originated in America. Mexico produces the greatest variety. Their season of growth is short during the hot and rainy season, and their resting period long when no rain falls; they are found on barren sandy plains and amongst rocks with scarcely any soil; so the three requisites for success are a sandy porous soil, all the heat possible in summer, and a long period of dryness and rest in winter.

THE PHYLLOCACTI.

To come to particulars, we will take first the Phyllocactus class as being the most common and best known here; in this class the stems are generally flat, though sometimes triangular, and, as the plant matures and gets age, the stems near the root gradually assume a round shape and become woody. In their native homes they are mostly epiphytal, growing on trees, but non-parasitical, like a good many of the Orchids; but in cultivation they do best in soil, which should be richer than for the round or *Hedgehog* classes; any good soil suits them, if only made porous with sand or charcoal, or both. In summer they enjoy all the heat possible, but are apt to get burned

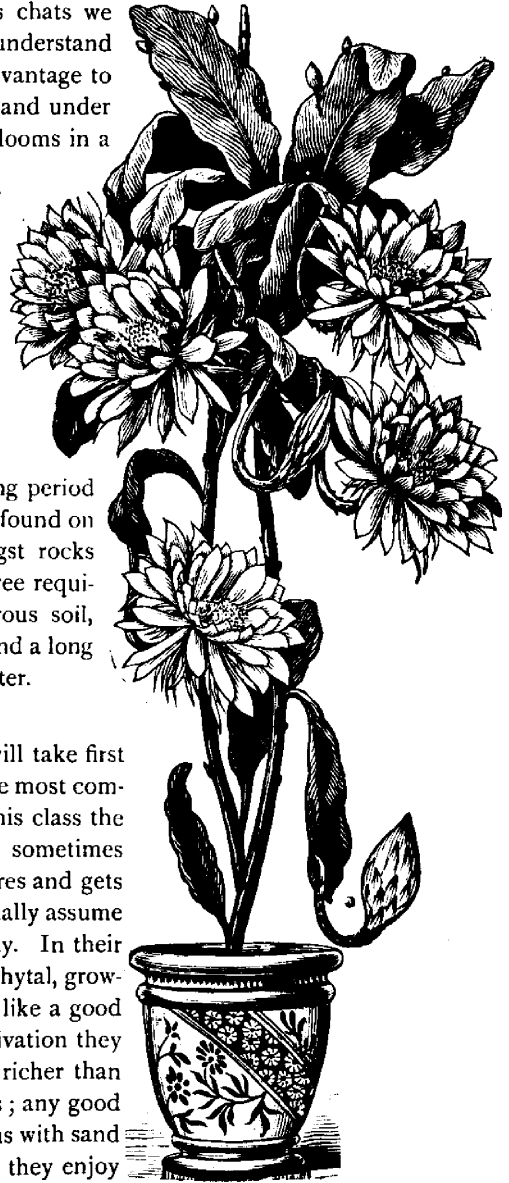


FIG. 769.—QUEEN CACTUS.

or spotted by the direct rays of the sun, and, when growing, can take plenty of water as long as the soil is porous and the drainage good ; but remember, that soil kept constantly wet and sodden is certain death to all Cacti, they cannot stand wet feet ; another important point is that large pots are injurious, even if pot-bound they will bloom all the better, and are then benefited by manure water once a week, and syringing or spraying is of great benefit.

In winter give no water unless they show signs of shrivelling, and even then only in moderate quantities, and it is well to raise the soil higher round the stems so that the water will not lodge about the collar. Cacti can be kept growing all the time, but at a sacrifice of flowers, and the plants get weaker. People say : " My Cacti grow all right, but do not flower," and in nine cases out of ten this is the reason. When at rest they can be kept in a light dry cellar, though a better place is a sunny window in a cool room, a temperature not lower than 50° and seldom higher than 55°, with the sun shining on them, is an ideal place ; therefore the nearer we can get to that the better. They are sometimes propagated by seeds, but it is rather a tedious process for amateurs, but are very easily increased by cuttings, especially of the young growth ; lay the cuttings in the sun for a few days until the cut hardens and forms a callus ; this would be death to the cuttings of almost all other plants, but is necessary for them, as if fresh cuttings are inserted in soil they are certain to rot. Sand or charcoal is generally used for rooting cuttings, and after roots are well started re-pot carefully in better soil, but with a good proportion of sand. The writer has had excellent success in getting a loam from a sandy knoll, by skimming off the grass the light sandy loam under is permeated with fine grass roots, this with some clean sand on top makes an excellent cutting bed, the roots push down to the soil and do not require to be removed so soon with the risk of injuring the roots. Tie the cutting to a plant stake, say, two inches above the lower end, push it down until the cutting is in the sand ; keep shaded and dry, only spraying occasionally, and it is almost certain to grow. For size, beauty, and profusion of bloom, for richness and delicacy of coloring, from scarlet to rose, and pure white, this class of Cacti are unrivalled, excepting perhaps by some of the orchids, and considering that they require less care and attention than a geranium, I cannot understand why they are not more generally cultivated. The original varieties of this class were not numerous, but by cross fertilization and hybridizing there are now nearly a hundred different kinds ; some are day, others night bloomers ; of the latter the best is " *P. Latifrons*," or the " Queen Cactus " (see Fig. 769), with pure white flowers, six to eight inches in diameter, with a delicious fragrance. This plant has only one superior, the night-blooming " *Cereus Grandiflorus*," but " *Latifrons* " is much more floriferous.

CACTUS CRANK.

MAKING A LAWN



S the lawn is intended to be an important and permanent feature of the home grounds it is worth a thorough preparation. A hurried, makeshift method of planting will always be attended with disappointing results. All drains or other provision for carrying off surplus soil-water should be placed, and the soil thoroughly dug or plowed, according to the size of the plot, and well leveled and fined. If the soil is poor in quality, stable manure may be applied at the rate of twenty tons to the acre, and plowed or otherwise thoroughly worked in, but if the ground is in proper condition to grow a fair crop of potatoes, manure should be omitted, as it tends to induce a rank and tender growth of the grass, too soft to endure drouth, and besides is liable to contain many injurious weed seeds. Half a ton of bone dust may be added instead of manure and harrowed in before the seed is sown. The seed is best sown on a very still day, early in spring or about the latter part of August, and lightly raked in; the whole surface should then be thoroughly rolled, or, if the area be small, beaten smooth with the back of a spade. In the preparation of the lawn it is important that a surface at least six inches deep should be uniform all over the whole, except on steep slopes facing the south and west, where the soil should be much better and deeper in order to prevent burning out in dry summers.

Seed should be sown at the rate of *five bushels per acre, or one quart to each 300 square feet*, if a good, quick and permanent turf is needed. When up three or four inches it should be cut and the mowings increased frequently. The oftener it is cut within reasonable limits the softer and finer the grass will be. Mowing alone will not keep it without occasional rollings. Compression of the soil, such as is given by the roller or by the trampling of cattle, is very beneficial to the roots of fine-growing grasses. Rolling should be done in the spring before the ground becomes dry or at any time after heavy rains, providing the soil is firm enough to bear a horse.

The best soil for a lawn is a rather stiff clay loam; sandy soils require more attention and frequent reseeding. The fertility of the soil is best kept up by an annual top-dressing of any good chemical fertilizer, at the rate of 300 to 500 lbs. to the acre, applied just before a rain, preferably in the early spring. An application of about 200 lbs. of finely-ground bone, and 10 to 15 bushels of wood ashes per acre yearly, in separate applications, will also maintain the grasses in sufficient health and vigor. Stable manures are disagreeable and should be used as little as possible.

To grass a bank or terrace.—For each square rod, take a pound of lawn grass seed and mix it thoroughly with six cubic feet of good, dry, garden loam. Place in a tub, and add liquid manure, diluted with about two-thirds of water, so as to bring the whole to the consistency of mortar. The slope must be made

perfectly smooth, and then well watered, after which the paste should be applied, and made as even and as thin as possible.

To Restore Old or Worn Lawns.—In early spring or late August scratch or rake up the bare spots, and sow the seed liberally, using about half the quantity recommended for laying down a new lawn; cover very lightly and roll, or press down firmly with a board, or back of the spade. A light mulch of clean, short grass or fine old manure may be of benefit if the weather should turn dry. For large lawns a light steel harrow may be used to advantage in stirring up the old surface.

J. T. LOVETT.

Little Silver, N. J.

Propagating Hardy Roses.—The simplest way for amateurs who have no greenhouse to propagate roses is to prune the mother plants hard in spring and then layer them as soon as the young wood has completed its growth, which will be about the beginning of July. Let these layers remain at the parent plant till the fall of the following year, then take them up and transplant them. They will make very strong plants. From cuttings it is more difficult, but it can be done. Have a small sash over a frame, put a 3-inch deep layer of moss into it, pressing it down solid, then put $2\frac{1}{2}$ inches deep of sand on top of the moss and press it firm too, and water it. Then after the middle of June take firm current year's wood, not too strong, three to four inches long, and shorten the leaves, then plant them solidly into the frame, and water them. Keep them generally moist, but give air to dry off the over moistness; also give a little shade. In fall they can be potted, or, better still, let them alone in the frame till spring, covering it with some rank litter in winter, and from time to time in fine weather ventilate the frame a little. Pot or transplant them in spring.

Budding roses is very easy. The Manetti is still the best stock. Budding can be done about the middle or end of June. Insert the buds as low down on the stocks as possible, even take the soil away from about the neck of the plant to allow you to get the bud in there. But after the buds have taken replace the soil. In spring cut the heads of the stocks back to the inserted bud. After the bud begins to grow, suckers from the roots are apt to show themselves, but remove them as soon as you notice them.—American Gardening.

Ashes for Lawn.—Here is what William S. Egerton, Superintendent of Parks, Albany, says upon this subject:—"Canada hardwood ashes have been used for topdressing the lawns last spring and this fall, two carloads, or some forty tons, having been distributed over the lawns, with the addition of several tons of ground bone phosphate. In this connection it may be proper to question the economy of using barnyard manures, as ordinarily applied in the fall, and raked off in the spring, when these ashes can be secured at \$10 per ton. The ashes are as effective when applied, and apparently as lasting in their beneficial effects, with the additional recommendation of being entirely free from noxious seeds."

A HANGING WINDOW GARDEN.

Many people are so situated that their gardens, if they have any, must be on a platform on the outside of some sunny window. Such hanging gardens are capable of affording a great deal of enjoyment. Many, however, are deterred from employing such a miniature garden from the fact that the ordinary frame

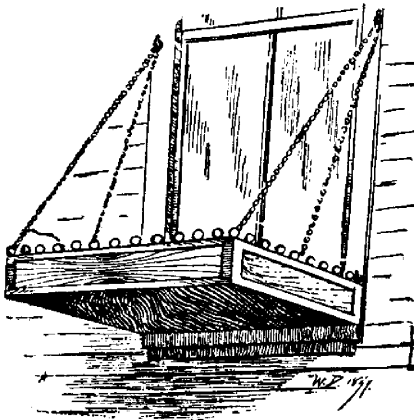


FIG. 770.—FOR A WINDOW GARDEN.

work that is used for the purpose is too expensive to construct, and is applied much too permanently to make it applicable to a rented house, where many flower-lovers are to be found. The illustration shows how a simple affair can be constructed, and how easily and simply it may be attached and detached from the outside of a window. It is a shallow box, with the inner side left off, the outside being as elaborate or as simple as one may elect. The inner edge of the box is attached to the window frame by hooks and hook eyes, while the chains on

either side end in rings that are supported by hooks at the top. Beautiful flowers, and not a few of them, are capable of being grown in such a hanging garden.—American Gardening.

Hardy Bedding Plants.—The tender plants endure but three or four months, but the well selected and properly planted hardy plant bed will open its display in early spring with snowdrops which are in bloom with the first pleasant days, even in March. They are quickly followed by scillas and crocus. Next come the tulips and narcissi, for a month; and before they are past the early flowering herbaceous plants are showing bloom, and the flowering shrubs have begun a display that will only end with the autumn. By May the creeping phlox, columbines, dornicums, Oriental poppies, German and Siberian irises; and of shrubs, the lilacs, spiræas, Japan quince, magnolias, mollis and Ghent azaleas; of climbers, the clematis, in its splendid varieties, open a season that will cover six months. June brings out rhododendrens, kalmias, roses, *Lilium candidum* and *L. elegans*. July ushers in Japanese irises and lilies in varieties that will show flowers until frost comes. During that period the tall phloxes, yuccas, rudbeckias, gaillardias, tiger lilies, hollyhocks, single and double, campanulas, rugose roses, day lilies, altheas, hydrangeas, tamarix, hardy sunflowers, and a host of other good things will also add their floral tribute.

When the autumn opens the Japanese anemones and the old-fashioned and hardy chrysanthemums come on and will bloom through early frosts and even early snowstorms.—American Florist.

Care of the Lawn.—Mowing should be done at least once a week in favorable growing weather, and even in dry, warm weather it should be cut twice a month. If the lawn has been properly made in the first place, and top dressed, the weather will have to be very dry to prevent its growth. The best mode of maintaining is the care given at proper times. In the fall it is necessary to give a good scarifying; this is done with a sharp-toothed rake made for that purpose. This operation is called cultivating. If the grass grows thin in some places, another light sowing should be made, then cover with tobacco stems, if the space is not very extensive, or give a coat of kainit; this should be applied in December. The scarifying process may be done again in spring, but not very heavy, merely enough to give a good combing all over. If top dressing can be done, good rotted manure may be used, allowing to lay from March to May, and then raked off with a coarse rake.

Weeds are offensive and unsightly; cutting out of the large ones is sufficient, as the smaller ones are choked by constant mowing. This means perpetuating and caring for a lawn is open for improvement, also varies in different localities. Where fertilizers containing pure bone in majority can be secured at small expense it is advisable to use, and avoid manure from the stable because of its weed producing.—American Gardening.

Sow Cyclamen Seed in pots or pans filled two-thirds with drainage and one-third with loamy soil. Cover the seeds an eighth of an inch deep, set the pot up to the light, but shade from sunshine and keep the temperature at 60° at night. Prick off the seedlings when about three weeks old, and when big enough pot singly into three-inch pots, then into four-inch pots, and finally into five-inch during September. Keep in active growth during spring and summer and do not allow them to dry or rest. A soil consisting of three-parts in bulk of sod loam and one-third of old rotted cow manure suits the plants very well. In fine weather, when not in bloom, syringe daily, in the morning in winter and afternoon in summer. Green fly is troublesome to the cyclamen, but by strewing fresh tobacco stems under and about the plants this insect pest is easily removed.—Farr and Home.



FIG. 771.



The Canadian Horticulturist

SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

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

⇒ Notes and Comments. ⇐

GRAFTING WAX.—A good recipe, especially for outdoor use, is the following:—Melt together 5 parts resin, and 2 parts beeswax; to this is added $1\frac{1}{2}$ to 2 parts linseed oil.

HOW OFTEN TO SPRAY.—Bulletin 84, Geneva Experiment Station, N. Y., says the least number of times to which will give good results is three times, viz., one before blossoming and two after blossoms fall.

FRUIT COMPANY.—At Owen Sound a company has been formed with 5,000 shares of \$10 each, called "The Owen Sound Fruit Company." The intention is to buy up the entire apple crop of that region—ship the best, and utilize the remainder for production of evaporated fruit, jellies, vinegar, etc.

THE GRIMSBY HORTICULTURAL SOCIETY (affiliated) held its first open meeting in the Town Hall, on Thursday evening the 18th inst. The hall was seated next the wall only, leaving the centre open for promenading among the six or eight small tables filled with choice house plants grown in windows by Grimsby amateurs. Fine Begonias and Geraniums were numerous, and prominently elevating its head above them all was a fine dark red Amaryllis, and on another table, amid some vigorous *Primulæ Obconicæ*, was a magnificent Easter Lily. Grimsby's "upper ten" were well represented, and were much pleased with the evening. A brief programme of music was given, and a paper on Floriculture read and discussed. A package of *Gladiolus* and *Begonia* bulbs was given each member at the close of the evening. The cut blooms from these *Gladioli* will make a fine display in September.

THE SAN JOSE SCALE.—It appears quite probable that Canadian fruit growers will be visited by another injurious enemy in this scale, which comes to us from the Pacific Coast. It is so minute, and withal so injurious and so difficult to destroy, that we must needs be well posted in the means of defence. Prof. Howard, U. S. Entomologist, says, that while spraying with kerosene emulsion in summer may prevent this increase, the proper spray for their destruction is a strong whale-oil soap solution immediately after leaves fall in autumn, and again, just before the buds burst in the spring.

Prof. Smith, of the Jersey Experiment Station, says that kerosene, emulsified with soap, is the best spray, made according to the following formula:—

Hard soap, shaved fine.....	½ pound.
Soft water.....	1 gallon.
Kerosene.....	2 gallons.

Dissolve the soap in boiling water, add to the kerosene, and churn with a force-pump until a smooth, white, butter-like mass is formed which adheres to glass without oiliness. The hotter the liquids are when joined, the sooner the emulsion will be formed.

For application against this scale dilute with five parts of water and apply liberally. The kerosene in this mixture does not evaporate so readily as when applied pure, and more opportunity is given to penetrate the scale. The caustic of the soap is also of use in loosening the scale and facilitating the entrance of the oil. An excess of soap in the emulsion is therefore no fault, and the emulsion is apt to be more readily made. The water should be soft for best results in making the emulsion; but hard water can be used to dilute.

THE RED CANADA APPLE.—There seems to be a difference of opinion among pomologists with regard to the apple which has been grown in Ontario for many years under the name of Red Canada. Samples of this apple have been sent in to this office from various parts of our Province, and all have the same characteristics and are everywhere known as Red Canada. But recently some samples of this apple were sent to Mr. J. C. Plumb, of Milton, Wis., by Mr. R. W. Shepherd, of Como, Que., with the request that he would supply root grafts for distribution among the members of the Montreal Horticultural Society. Mr. Plumb replied that the apple was not Red Canada, but a variety described by Charles Downing under the name of Baltimore. Red Canada, he says, is not hardy enough to succeed in Canada. We give some extracts from Mr. Plumb's letter: "The Red Canada of Downing is a better apple than the Baltimore, but not hardy in Wisconsin. I have not tried to grow it for twenty years, but still we find it occasionally on our lake-shore regions. The Baltimore of Downing and the Flushing Spitzenburg are the same apple. Warder and Elliott, our two best authorities, agreed on that twenty-five years ago. About December, 1879, I settled this whole matter with Downing, and have his letters

on file to show for it. The Baltimore we have grown for over forty years in Wisconsin, and now find it fruiting all over Southern Wisconsin. Let me say, also, that Mr. T. T. Lyon, President of the Michigan Horticultural Society, agrees with me in this distinction between the two apples. I can easily see how sensitive your people may be with regard to changing the popular name of a fruit. I would suggest that in your future lists you use Red Canada as a synonym only, that is, after you are fully decided upon this matter."

In order to settle this matter, we have ordered from Mr. J. C. Plumb, grafts of his Baltimore, and from Mr. T. T. Lyon, grafts of the Red Canada. This will be grafted side by side by Mr. W. H. Dempsey, at our Bay of Quinte Experiment Station, and we hope in the course of time to be able to satisfactorily settle this matter concerning the identity of the Red Canada which we grow in Ontario.

GRADING APPLES.—Considerable opposition has been manifested in the Ontario Legislature against Mr. Dryden's Bill *re* the prevention of fraud in packing fruit. This bill provides first, that apples and pears shall be graded into first and second classes, these classes to be the same as those which were some time ago agreed upon by the Fruit Growers' Association and incorporated in the Dominion Inspection Act. The name of the grower is to be stamped upon the package along with the grade as a guarantee of good faith, and in order to identify the shipper, in case the goods are not true to the grade marked upon the outside of the package. The bill further provides that all kinds of fruit shipped to market shall be uniform in character with the top layer in the package, or, otherwise, the packer will be liable to a fine. Owing to the opposition from shippers who do not wish to be compelled to grade their fruit, the important sections, providing that apples should be graded, have been omitted from the bill, at least for the present.

In our opinion there would be a decided advantage to the fruit growers generally in having their fruit uniformly graded. Canadian apples will never take the place they should in foreign markets until some means is adopted by which fruit shall be somewhat uniform in quality, and we know of no better plan than by adopting certain grades and making shippers liable to a fine if their goods are not up to the grade marked upon the package.

The only possible objection which any grower could have to the bill is the provision making it compulsory that he should mark upon the packages of apples and pears grade No. 1 or 2, as the case may be. In some instances the shipper might prefer not to mark his fruit according to the grade, or he might wish to ship it in bulk without separating the grades one from the other. This will be a good question to submit at the next meeting of our Association to be held next December, at Woodstock, when no doubt the whole bill will come under review.

Defining the grades appear to us a most important provision, because, as

things now are, each shipper has his own idea of what is meant by grades No. 1 and 2, and the grades, therefore, mean nothing to the buyer. It is most important, therefore, that the grades be defined, in order that buyers and sellers may know what is meant by them. Some think that it is too much to require apples under grade No. 1 to be entirely free from scab, and that it should read "nearly free," in order that apples slightly affected might be included. This, it appears to us, would give too much liberty and might lead to lowering of the standard. Let us hope that with the application of Bordeaux mixture we shall be able to grow apples in Ontario that shall be entirely free from this disfiguring scab, and then we shall without difficulty be able to make our grade No. 1 a credit to our country.

THE PLUM KNOT and Peach Yellows Act has been amended in such a way as to provide most effectually for their destruction. On request of fifteen ratepayers, the Council of any municipality is obliged to appoint an inspector, who has full power to have the diseased trees speedily and totally destroyed. Late scientific researches also lead us to hope that the faithful application of Bordeaux mixture will prevent this fungus from spreading. Prof. Maynard, of Massachusetts, is the first who has experimented in this line; he found that the number of warts were *very decidedly* less where the trees were treated with copper mixture than when untreated. A thicket of Morello cherries, treated two seasons, only produced 165 new knots, while a portion untreated yielded 3,466 knots.

✦ Question Drawer. ✦

Begonia Raising.

732. SIR,—Do the different species of begonias require to be pruned during the winter, especially those which lose all or most of their leaves?

R. LIGHT, *Kingston.*

Reply by Prof. Hutt, O. A. C. Guelph.

Begonias vary considerably in their habits, and their treatment should vary accordingly. The tuberous-rooted kinds, which lose all their leaves and stems after blooming, require no pruning. Most of the shrubby kinds require only an occasional pinching back during the growing season, to cause them to branch and grow symmetrically. Some of the shrubby kinds, like *B. Weltoniensis*, which lose part of their foliage when resting, should be cut back at that time to within a couple of inches of the top of the pot, thus causing them to start afresh from the bottom. The large leaved *Rex* varieties, which are generally allowed to rest during December, January and February, should have their old leaves cut away in March, when they are divided and re-potted.

Stock Mixtures.

733. SIR,—In your March number I notice the first practical directions for making Bordeaux mixture in large quantities. Will the dissolved copper sulphate and the milk of lime keep any length of time without deterioration?

J. H. BENN, *Niagara.*

We see no reason why the solutions should not keep any length of time. Of course it would be necessary to add fresh water occasionally, to make up for evaporation.

734. SIR,—Do you know of any apple trees that would be likely to stand this climate?

JOHN PARKINSON, *Portage la Prairie.*

Reply by J. Craig, of Ottawa.

Our experiments at Brandon and Indian Head have shown us that very few varieties of the named kinds of apples can be grown successfully at any point west of the Red River. Among those which have succeeded best are the following:—

Crabs.—Whitney No. 20, Red and Yellow Siberian, and Martha.

Apples.—Silken Leaf and Duchess have succeeded best of the named varieties and have done fairly well in some localities, when planted on soil not too rich. In situations like this the wood ripens better and is less likely to be injured by the cold of winter than if planted on the usual heavy prairie soil.

Nitrate of Soda.

735. SIR,—In using nitrate of soda for a special dressing, would it be advisable to mix it with land plaster, or would it be better to apply it by itself?

W. MILLAR, *Oshawa.*

Fertilizers for Orchard.

736. SIR,—What is the best fertilizer for a mixed orchard of apples, pears and plums, that has been planted fifteen or twenty years? The ground has been in hoed crops since planting.

W. H. C., *Newcastle, Ont.*

Apricots not Blooming.

737. SIR,—My Russian apricot has bloomed now for three years and borne no fruit. Can you explain?

H. KLIPPENT, *Stayner.*

We have had similar experience with the Russian apricots and have come to the conclusion they are of little value for us in Canada. The trees blossom too early in the spring and are often caught by early frosts; besides, while young, the tree seems inclined to drop its blossoms and set no fruit.

Tomato Rot.

738. SIR,—What kinds of tomatoes are least liable to rot, and what kinds are freest?

A MEMBER.

Sowing Evergreen Seeds.

739. SIR,—When should evergreen tree seeds be sown?

H. K., *Stayner.*

They should be sown as soon as gathered in the autumn, and kept shaded during the hot weather of the succeeding summer.

* Open Letters. *

Waterloo Horticultural Society.

SIR,—Our Horticultural Society is so far a great success. We are arranging to make a bed in our public park, tall Cannas in the centre, dwarf ones next, and on the outside Phlox Drummondii, or Coleus. The park is quite a resort in summer, the people from a distance hold picnics there, our band holds concerts there, and it affords as fine a half-mile bicycle track as is found in Ontario. Our bicycle club is trying to get the annual meet here in July, when twenty-five hundred wheelmen will be here. This will make our Society popular and will lead to very much better things in future.

JAMES LOCKIE, President.

Insects and Fungi.

SIR,—My fruit crops have suffered badly from the ravages of insects and fungi, because I did not know how to cope with them. Thanks to your valuable Journal, the weapons have now been put into my hands to fight these two great enemies. I am the only one, so far as I know, who is testing varieties of fruit in this section, and I am willing to send you items from my experience at any time, if desirable.

JAMES WITTUP, *Fergus, Ont.*

Lindsay Horticultural Society.

SIR,—The Lindsay Horticultural Society held a very successful public meeting on the 5th of April in the Council Chamber. Mr. J. Cooper, president of the Society, read an excellent paper on horticultural societies and their work. Mr. T. Beall gave a very interesting talk on spraying, in which he advised the fruitgrower to use common sense and judgment so as to spray at the proper time. He also gave the formulæ and mode of using the same on different plants and trees. Mr. Beadle, from Toronto, gave a very interesting and instructive talk on plants and plant life in the house and garden, with illustrations, after which he answered a number of questions on growing and the management of bulbs and other flowers and plants in a satisfactory way. Mrs. Speir then read a good paper on flowers in the home and their influence. Mr. Maxon had a fine show of plants and flowers in the room, which gave a pleasing effect. There was a good attendance, but we would like to see more take an active part in this good work.

F. FRAMPTON, *Sec.*

Horticultural and other Institutes.

SIR,—Allow me to say to you that I am much pleased with the ground taken by you on page 108 of March number of CANADIAN HORTICULTURIST anent Institute meetings, namely, holding them for purposes of study and getting of valuable information. Having attended Farmers' Institutes for a number of winters, I am fully satisfied of the necessity of making a change in the character of the evening meetings in many places. I have expressed to Mr. Hodson my views on this subject in general terms, and asked for an interview when he is in Toronto. You are aware that much has been said of late concerning agriculture being taught in the public schools, especially in the rural schools. But the sons of the farmers from 12 to 18 years old do not attend. They are mostly taught by girls, because they are cheap, and the lads do not have any respect for such teachers. To meet the needs of these young men should be the aim of our Institutes, both of the Horticultural and Farmers'. In order to do this they must be made interesting to them. No dry talks about a lot of hard jaw-breaking names will do. No text-book study of anatomy of plants either. Put a plant, say a young wheat on oat plant, or a bean plant, or even a potato tuber into their hands and get them to tell what they find there, and having drawn from them all that each has to say about it, then they will be in a receptive state of mind to listen to what the person conducting the exercise has to tell them about what they have seen or not seen. In some such way I am persuaded the evening meetings can be greatly improved that are now devoted to mere amusement, and a sort of school for instruction in the laws of plant and animal life that lie at the foundation of successful agriculture be eventually worked out. I am requested to go to Lindsay and address their Horticultural Society on the "Cultivation and Care of Flowers in both Garden and House." Here is a subject that cannot be exhaustively treated in a dozen evenings. All that can be done in one evening is to touch the hem of Flora's robe, enunciate a few general principles, and that in such a general way that but little good can result to the members. They should have a series of meetings, so that after discussing general principles their application and modification to particular cases can be illustrated.

D. W. BEADLE, *Toronto.*

Spraying for the Plum Root.

SIR.—There has been considerable discussion during several recent meetings of fruit growers, respecting the dreaded approach of the San José scale.

How is it that more is not said, or rather, that more is not done to stamp out the black-knot which we already have in such profuse abundance in this neighborhood. If anyone may see the knots hanging over the fences along the main road to Beamsville, what may we expect in the background? What are the inspectors doing?

It is well-known that the black-knot will destroy a large orchard in a very short time, (such was the experience of the plum growers of the Hudson Valley), whereas, the fruit growers in California seem to have found a reliable remedy for the scale.

We hope that the matter of the eradication of the black-knot will not be thrown into the shade by the fear of the possible advent of the San José scale.

ALLAN BROS., *Grim'sy.*

Box Thorn Hedge.

Mr. A. G. Heaven, of Oakville, sends us the following clipping from an English newspaper, concerning this plant, and suggests that its adaptability to Ontario be tested at our Experiment Stations:—

SIR,—Now, as before, people almost exclusively choose the white thorn for laying out hedges. In a fertile, well-cultivated ground, in a well-qualified situation, fine hedges of white thorns may be raised if they are attentively cared for and regularly topped. But it is very often impossible to offer the necessary requisites before-mentioned, even if we do not spare either cost or labor. Neither in a dry ground, in gray sand, gravel, heath-country, etc., nor in boggy, cold flat-land, in the bright sunbeams on steep slopes, can a good hedge of white thorn be accomplished; and much less in the open acres of northern regions,

where some storms, or the persevering coldness of winter, hinder very much the progress of vegetation. Thence follows that so many failed improvements (plantings) of the white thorn are to be seen. Yet it is the desire of every assiduous proprietor to see his estate solidly hedged in.

The Swedish upright-growing box thorn, however, is tougher and much more unassuming. In 3 to 4 years that plant, being content with every ground, even if it be the most barren one, forms dense and durable hedges.

The home of the box thorn is the northern part of Denmark, Sweden, and Norway, where we find the farms surrounded by stately hedges of that plant, even in such parts where the climate is rough and most unfavorable. The inhabitants of those countries set, therefore, a great value upon the box thorn, which is most advantageously set as layers in the months of March and April. I am ready to answer post-paid inquiries respecting the cultivation of that plant.

P. B. CHRISTIAN, Engineer of Plantations, *Tondern North Germany.*

Horticultural Institutes.

SIR,—The idea you suggested in last month's *HORTICULTURIST* regarding a school, or institute upon horticultural subjects, I think is an *excellent* one, and I, for my part, would be very pleased to give lectures connected with such work. My three lectures, "Fungi," "Plant-cells," "Fertilization," illustrated with large charts, would be suitable for such meetings.

J. H. PANTON, *Guelph.*

Trenton Horticultural Society.

The adjourned meeting of the Horticultural Society was held in the Town Hall, on Friday, March 15th, Mayor Morrison in the chair. The full number of fifty subscribers have been secured already. The meeting elected officers as follows:—President, R. Fraser; Vice-President, W. H. Berkinshaw. Committee:—J. H. Stewart, W. Jaques, G. W. Ostrom, J. W. Hyde, S. J. Young, W. H. Dempsey, W. T. Wilkins and T. F. Weir. D. J. Clarke and J. Nicolson were appointed auditors. Meeting adjourned.

Board meeting—S. J. Young was appointed Secretary-Treasurer. It was resolved to make all members of the Fruit Growers' Association.

S. J. YOUNG, *Secretary.*

✦ Our Book Table. ✦

The Report of the Western New York Horticultural Society for 1895 is a book of 174 pages, and as usual contains a large amount of valuable matter. An excellent lithograph of the late P. Barry forms the frontispiece. No fruit-grower should fail to correspond with the secretary, Mr. John Hall, Rochester, N. Y., in order to secure a copy Dairying for Profit, or the Poor Man's Cow, by Mrs. E. M. Jones, Brockville, Ontario, Canada. A most excellent work, invaluable to Canadian farmers Annual Report of the Pomological and Fruit Growing Society of the Province of Quebec, 1894. Secretary, W. W. Dunlop, Outremont, Que. . . . Twenty-second Annual Report of the Minnesota State Horticultural Society, 1894. A. W. Latham, Minneapolis, Minn., secretary New York Agricultural Experimental Station, 12th Annual Report. Peter Collier, Geneva, N. Y., director, . . . Report of the Secretary of Agriculture, U.S.A., 1893. I. S. Morton, Washington, secretary. . . . 20th Annual Report of the Ontario Agricultural College, Guelph.

CATALOGUES.

Green's Fruit Instructor. Rochester, N. Y. A very amusing and interesting catalogue of fruits. . . . Fourth Annual Catalogue, strawberry plants and seed potatoes, N. J. Bryan, Mohawk. . . . Bruce Catalogue of Seeds, John A. Bruce, Hamilton, Ont. . . . Niagara Falls Nurseries, E. Morden, proprietor, Niagara Falls South, Ont.

SITUATIONS ON FRUIT FARMS.

We have so many applications from young men who wish to learn fruit farming, we have opened up this column as a means of communication between them and fruit growers. Names and addresses of either entered for 25 cents a month, three lines allowed.

Situations Wanted.

ON fruit farm, 23 years, strong, active, willing, abstainer, educated. Address CHAS. E. HOUSTON,
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YOUNG man for general work on a fruit farm.
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Special rates allowed for ads. under this head. We have letters inquiring for Fruit Farms in Ontario, and this will form a convenient means of communication between buyer and seller.

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- (d) A FRUIT [for testing] PLANT.

2. Subscribers paying \$2, for two years at one time, or for two subscribers, may have, in addition to the above, a choice of :

- (e) THE BINDING of any volume of the CANADIAN HORTICULTURIST, the numbers to be sent to this office.
- (f) A VINE OF GREEN MOUNTAIN GRAPE, a most promising early white grape, only sold by nurserymen at fancy prices ; said to ripen the end of August, and to be of best quality. Should be tried by every fruit grower in the Province.
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Horticultural Societies and Local Fruit Growers' Associations

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

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

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



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Grimsby, March, 1895.

Signed, W. MCKINNON.

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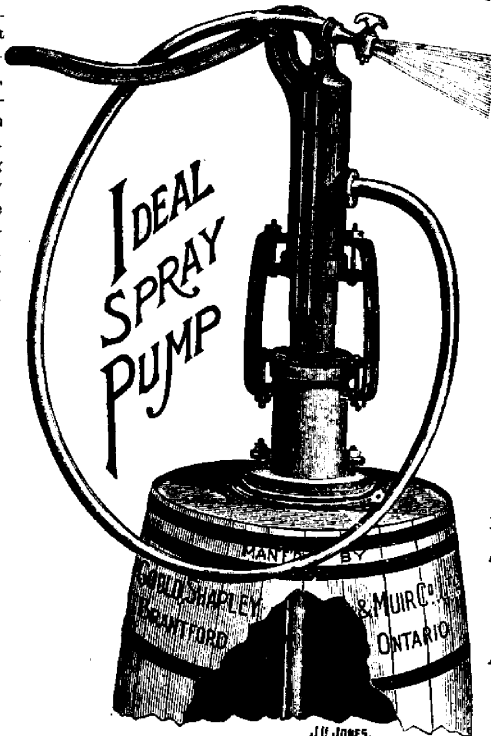
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