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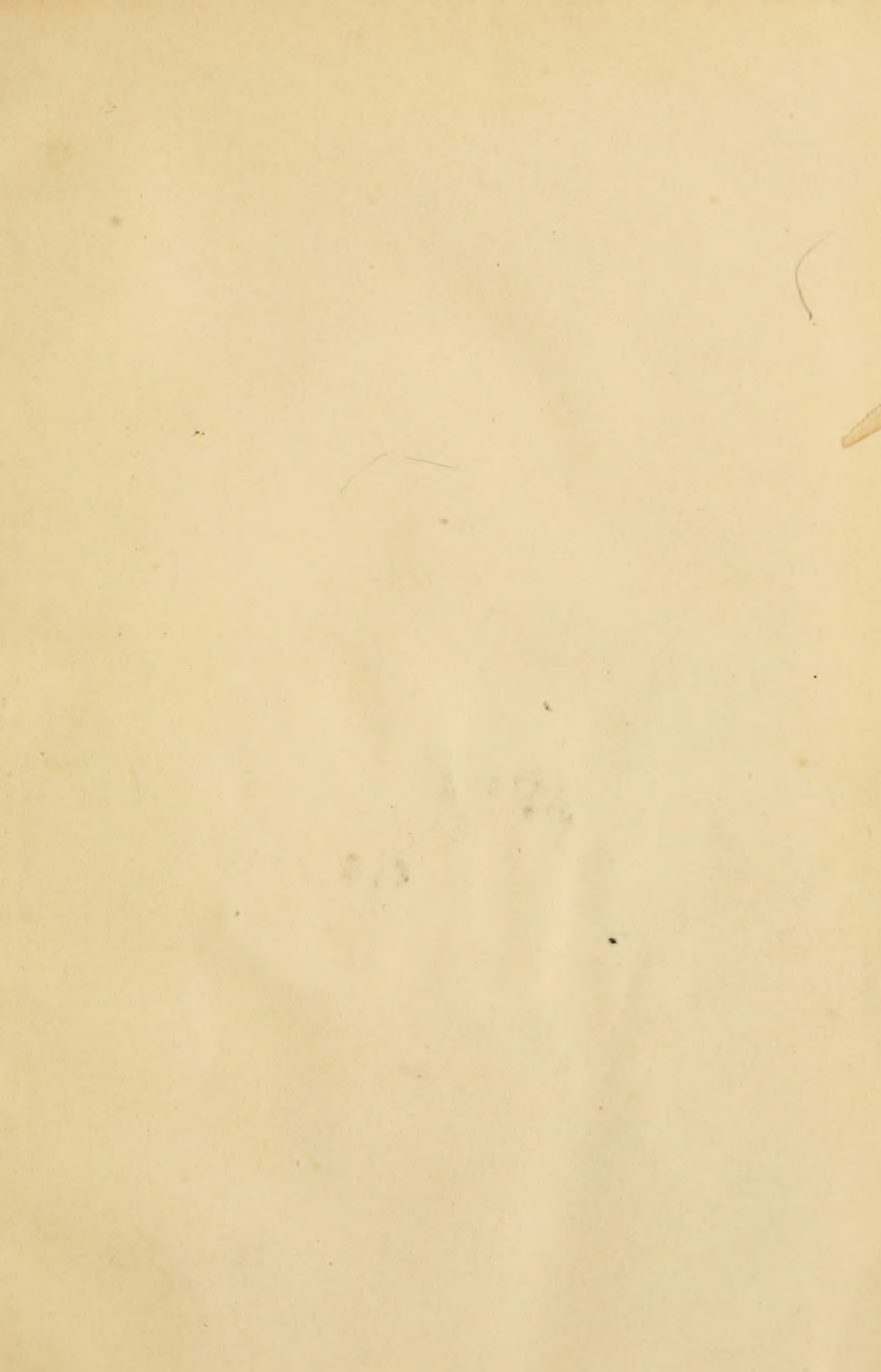
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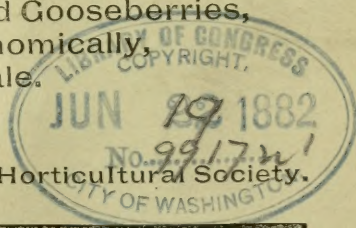
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Luscious Fruits.

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How to grow Strawberries, Raspberries, Blackberries, Grapes, Currants and Gooseberries, in abundance and economically, on a small scale.



By O. B. GALUSHA, Sec'y, Ill. State Horticultural Society.

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Vol. I.

No. 5.

LUSCIOUS FRUITS.

LOCATION AND PREPARATION OF SOIL.



UDICIOUSLY planted, one-fourth an acre, well cared for, is sufficient to produce a supply for a family of eight persons. This fourth acre should be selected if possible where the surface is a little inclined—not much matter how little—to allow surplus water from rains and melting snows to pass off. Inasmuch as cultivation as much as possible should be done with a horse, it is obvious that the garden should be oblong so that the rows will be long enough to admit of profitable horse-culture.

Let then the garden be laid out ten rods by four rods, making the longer way north and south, if possible, so as to admit the sun's warmth on both sides the rows, which, of course, should extend the longer way of the ground. If the plan herein described is to be departed from let the leading features of long rows and horse-culture, remain; for these are essential to economy.

It is not always possible to choose a soil best adapted to growing small fruits, for one must take such as he has in

near proximity to the residence. Any good soil will make a good berry-patch; and if not convenient to underdrain it with tile, which is *very* desirable wherever the subsoil is tenacious clay, surface-drainage and deep cultivation will be good substitutes.

Having selected the ground, it should be well manured, with six two-horse loads of well-rotted manure to the fourth acre, if in good condition previously, or eight loads if impoverished, naturally thin or quite sandy. This should be thoroughly pulverized when spread, and well incorporated with the soil by two or three deep plowings and harrowings, which will also tend to fit the soil in the best manner. One precaution is absolutely necessary to success, viz.: never plow the ground when saturated; it is better to plant late in a warm, mellow, friable soil, than early in one plowed when too wet, as, if wet when prepared, it will bake when drouth ensues, and starve the plants. I always use a roller or clod-crusher after each plowing, when fitting ground for plants, as success depends more than on any other point (except cultivation), on having the ground mellow and *finely pulverized* to a depth of about eight inches. To one accustomed to raise garden crops, it is superfluous to add that the seeds and roots of white clover and June grass must never enter the berry patch. Either one of these species will soon ruin a strawberry bed; for if once they obtain a foothold, it is very difficult to eradicate them, the only sure way being to take up plants and roots of grass together, being careful that *all* the grass-roots are removed.

Having the ground thus fitted, as early in Spring as it is in best condition to work, smooth the surface so that the mark of a cord can be readily traced upon it, and proceed to lay it out and plant about as follows: stretch a cord wherever a row is to be planted, walk upon it the length of the plat and remove it. The first row should be for grapes, which can be trained to the fence, and may be set but one

foot from it, and the same may be done on the other side of the plat, thus economizing room. I would plant about as follows, the width being four rods, or sixty-six feet :

1	row	grapes (from fence)-----	1	feet.
1	"	red Raspberries (from grapes)----	5	"
1	"	black Raspberries-----	6	"
2	"	Charles Downing strawberries—		
		first row (from black caps)---	5	"
		second row (from first)-----	3 $\frac{1}{2}$	"
1	"	Miner strawberries .-----	3 $\frac{1}{2}$	"
1	"	Cumberland Triumph strawberries	3 $\frac{1}{2}$	"
1	"	Kentucky " "-----	3 $\frac{1}{2}$	"
1	"	Longfellow " "-----	3 $\frac{1}{2}$	"
1	"	$\frac{2}{3}$ gooseberries, $\frac{1}{3}$ red raspberries.	6	"
1	"	currants -----	5	"
2	"	blackberries (seven feet each)----	14	"
1	"	grapes-----	5 $\frac{1}{2}$	"
		Space from grapes to fence-----	1	"

This uses the four rods, or sixty-six feet.

PURCHASING PLANTS.



SUCCESS in fruit growing depends so largely upon planting the best varieties, pure and true to name, that I can not forbear giving a few words of advice to those who are about to purchase plants. While it is true, that the varieties named in the lists in this pamphlet, may not be the very best for every locality, and while it is probable that some of these will give place to better ones in the near future for all localities, yet it is of the highest importance that the planter turn a deaf ear to each and every stranger, or person without an established reputation, who claims to have something better. There are nurserymen in nearly every county, of

established reputation; but if none are near, then send your order to such wherever they are, receiving plants by express.

Probably at least half the failures to make fruit growing profitable, either when for family use or for market purposes, may be traced directly to planting varieties not adapted to the soil or climate, or, if nominally of the right kinds, planting mixed or spurious plants; and nine-tenths of these cases are the result of listening to so-called agents whose voluble tongues abound in mis-representations, scarcely equaled by their extravagant pictures and bottled "specimens"—the latter "gotten up to order," and *named*, from time to time, *as circumstances require*. Deliver yourself, dear reader, from all smooth-tongued peddlers; *trust not the words of any stranger*. Those who carry genuine certificates from growers of plants, who are known to you as men of integrity, *who themselves vouch by certificates for the rectitude* of every word and act of their agent, are, of course, exceptions to the rule; but these exceptions are rare.

VARIETIES.



VARIETIES are a matter of individual taste, and no one can select a list of fruits which will best suit the palates of every member of his household; neither can he plant the *species* of fruits in such proportions as all would agree upon—for one prefers red raspberries to black, or currants to gooseberries, and *vice versa*; and so with other fruits. I will therefore, in mentioning varieties, give only the *leading* characteristics of those recommended, assuring the reader that the strawberries already named, are such as are most generally commended as good, and most

profitable, by persons who have tested very many sorts; that all have self-fertilizing or perfect blossoms; are prolific bearers, and well adapted to withstand the rigors of Winter, and heat of Summer, as well as to flourish in a variety of soils and situations, giving a continued succession and supply of fruit from the time the earliest strawberries ripen until blackberries are gone; embracing, in the latitude of Chicago, about sixty-five days—from June 1st to August 5th; when the coarser fruits—apples, peaches, plums, etc., will supply the table until grapes begin to ripen; when these will add nearly four weeks more to the time in which the garden plat supplies the table, or at least 85 days in all.

STRAWBERRIES RECOMMENDED.

The Charles Downing is a large, bright, conical berry, of sprightly sub-acid flavor, ripening *early* after the first one or two years; will remain on the vines for a day or two after coloring without damage, or is good if picked when only half colored. This variety has the longest season of any variety in common cultivation, beginning as early as any on well established vines, and holding out as long as any on this list, except Kentucky, and the berries are of good size to the very latest. It is always reliable for a good crop, from the first year onward.

Miner (or Miner's Great Prolific) is a strong, vigorous plant, and an abundant bearer, on all soils; of quite large berries, of rather dark color, and of excellent flavor; beginning to ripen a little later than Downing—a universal favorite.

Cumberland Triumph is one of the most hardy and robust of all the strawberry plants, bearing a fair crop of uniformly large berries, many measuring two and a half to three inches in circumference; round, of a delicate, attractive color, and a pleasant, not very rich, flavor.

Kentucky is a tall, strong grower, with fruit stems which

hold its large, bright, conical fruit well up out of the dirt. The berries are beautiful, of light weight, excellent, rather sweet flavor, ripening late, and continuing till Turner raspberries have well begun yielding fruit. Very small berries are rare among Kentuckys, while those measuring three inches around are not uncommon. This plant is especially adapted to sandy soil, and planters having such soil may well put two rows of Kentuckys, leaving out one row either of Miner or Longfellow; while those having a rich prairie soil may leave it out altogether, and substitute Sharpless, a rampant grower, producing fairly well of bright, sweetish berries, some of which are of immense size. This is also a late ripening sort.

Longfellow, though but a few years in cultivation, has won its way to universal favor by its good growing and bearing habits, and its very attractive, large, longish, pointed berries, looking as though touched with the varnish brush, and which, when eaten, leave no wish for any thing better.

GRAPES.

It is more difficult to recommend a list of grapes than any other species of fruit, as the "name (of varieties) is legion," and a hundred are good. One row should be—

Concord, as the best vine for endurance and productiveness, fully tested. This is the large purple grape of the markets, and needs no description. For the other row, north of latitude $41\frac{1}{2}^{\circ}$, I would plant half with Martha, an amber-colored variety, very productive. The vine is as hardy as Concord. The other half may well be planted with Worden—like Concord, but a little earlier and sweeter.

South of latitude $41\frac{1}{2}^{\circ}$, a long list of grapes is recommended by every grape-grower, and no two lists are alike. A selection from Rodger's hybrids will give satisfaction.

Massasoit is very early, "red," or amber color; both clusters and berries very large; flavor sweet and sprightly.

Agawam, another of these hybrids, is deservedly popular, on account of the vigor, hardiness, and productiveness of the vine, the size of its clusters of fruit, and its large, luscious berries.

Merrimac, still another, has same characteristics of vine; fruit black, with a rich flavor. The second row may be planted to two of the above sorts.

For latitude south of $40\frac{1}{2}^{\circ}$, Salem will ripen well, and prove in every way satisfactory. It is well to learn which of the many desirable varieties are profitably grown near by, and plant such.

RASPBERRIES.

Among the Red Raspberries, Turner is the best for family use. The canes are hardy and quite productive; the berries ripen as early as any, and are sweet, with little of the peculiar "red-raspberry" flavor, which is disliked by many. The Cuthbert (or Queen-of-the-Market, as it is sometimes called) is a later sort, with hardy canes, large berries, and an abundance of them. Reliance is still more productive, equally hardy, and the berries still larger—the largest red raspberry I have ever grown—but, though of sprightly flavor, is not as rich as the preceding. I will name for the row, half Turner and half Cuthbert; and if one-half the gooseberry-row only is wanted for that fruit, I would plant the other half with Reliance raspberries. This is a late variety, extending a little into the blackberry season.

CURRANTS.

Of currants I will recommend Red Dutch for one-half the row; Cherry (or Versailles) one-fourth, and White Grape one-fourth. Red Dutch is the common large red currant of our markets; Cherry is later and larger in size; White Grape is large, white, long in bunch and not as acid as the reds.

GOOSEBERRIES.

The most valuable sort is Houghton's seedling, and I

can hardly recommend any other for the family. All the larger, coarser sorts mildew and drop their fruit badly. Downing, though larger in berry, is not always productive.

BLACKBERRIES.

South of latitude 40° the Kittatinny is hardy and desirable, being very prolific and the fruit large and of good quality. Lawton is also grown with good success. Either or both these may fill the row; though, for myself, even here I would plant a few Snyders to give fruit in case of possible damage in Winter to the canes of the others. From latitude 40 to 42° the Snyder will prove more satisfactory than any other sort, as the canes are hardy and immensely productive, and the berries of fair size, and, when ripe, melting and luscious.

PLANTING.



COMMON sense is the best instructor and guide. You notice that the crowns, buds, of the strawberries naturally grow at the surface—neither above nor buried below, therefore set out the plants so that when the ground is leveled and settled, the crowns will be scarcely hidden below the surface; for if planted much deeper they would perish by rot in a long spell of wet weather; or if protruding entirely above the surface, would wither and dry out in the heat and drouth of Summer. You notice also that the crowns of the rooted tips of your black-cap raspberries, also are found near the surface, therefore do not violate the laws of nature by burying them three or four inches below. On the other hand, you quickly see, by the bleached bases of

the red raspberry and blackberry canes, that their roots are formed from three to five inches below the soil, therefore shallow planting would be likely to prove fatal to them. Set them so that their horizontal roots will be about three inches below the surface, a little less than their average original depth if they are sucker plants. In planting strawberries, be careful to keep them damp and fresh constantly till they are planted. This is most easily done by putting them into a pail partly filled with water, taking out one at a time as wanted. Open slits, narrow holes in the soil about a foot apart along the lines and follow at once with the planting, spreading out the roots and *pressing the soil firmly against them* their entire length. A spade is a good implement for this purpose, though a gardener's trowel or even a "paddle," such as is used for cleaning plows of dirt, will answer very well.

It is well to clip off nearly all the leaves from strawberry plants before, or immediately after planting—no matter if but one good leaf is left—as there will be less danger of the plants dying, in a dry air and hot sun.

In planting red raspberries and blackberries, the canes should be clipped down so that only one or two buds are left, and the growth from these must be stopped as soon as any shoots appear, coming from the roots. It is quite as well to plant these in autumn, if the ground is in good order, covering them well over winter with mulch, which must be removed early in the spring. Such plants usually make better growth than those planted in spring. Currants and gooseberries should have but one to three stalks left at planting, according to the strength of the roots.

It is not necessary to water plants when set out in a damp soil, though in planting strawberries it is well to leave a little hollow about the plant when first set and fill it with water sufficient to saturate the soil as deep as the roots extend, filling the excavation with surface earth as soon as

the water has disappeared. In my own practice, I always use a very weak liquid manure for this purpose, made, usually, by putting a shovelful each of ashes and droppings of the hen-roost in a barrel full of water, and allowing it to stand a day before use. Plant currants three feet and gooseberries four feet apart in the rows. In planting any species of plant or tree, it is necessary that *all the crevices among the roots be filled with fine earth*, even if it takes the fingers of the planter to do it, while he is on his knees at the work; and this should be followed by closely pressing the earth upon and among the roots.

The rows of plants in our plat should be but nine rods long, leaving fully eight feet at each end for turning space when cultivating.

Distances apart to plant.—Plant grapes seven feet apart, twenty-two plants to the row ;

Red Raspberries, three feet apart, 50 per row ;

Black Raspberries, three feet apart, 50 per row .

Strawberries, one foot, 150 per row ;

Currants and Gooseberries, three feet apart, 50 per row ;

Blackberries, three feet apart, 50 per row.

The borders along the end fences should receive an extra amount of manure, and be forked or spaded deeply and finely. Here may be grown, at one end asparagus and at the other rhubarb, sufficient for the family.* Set one or two-years'-old roots of asparagus, about one foot from the fence, at the north end, and about a foot apart in the row, covering the crowns from two to three inches deep. The variety called Conover's Colossal, is as good as any ; in fact, more depends upon manure than upon variety, in raising fine as-

* These vegetables, though apparently out of place in a fruit-garden, can be grown there at a mere nominal cost, and as these borders are well adapted to them, and as they require a permanent place, they belong here rather than in the plat devoted to other vegetables, which is plowed and renewed every year.

paragus. Across the south end of the plat, plant roots, or "buds" of Linnæus rhubarb (the best sort), planting about two feet from the fence, and about three feet apart in the row, setting the buds two to three inches below the surface. The pieplant will thrive well in the partial shade given by the fence, while the asparagus will start early in the Spring upon the warm, sunny side of the north fence, and will astonish its owner and his family by the numbers and size and tenderness of its delicious shoots. Do not hesitate to plant these through fear that they will be tramped by the horse, for his feet will seldom come as near the fence as the roots of the plants, and the few stems he may chance to knock off will be just as good for the table as though broken off by hand.

As soon as the planting is completed, if not done before, the plat should be inclosed with a picket fence, if fowls are allowed to range. If good material is not procurable, an effective temporary fence may be made by using common laths, nailed on three or four-inch strips, and these nailed or wired to strong stakes driven in the ground. Such a fence, if taken up in the fall and kept under shelter through the winter, will last several years.

CULTIVATION.



WITH cultivation, as with planting, good judgment will serve well in place of definite instructions, with every intelligent person accustomed to the care of ordinary farm and garden crops. Study the habits and needs of the plants, and act upon knowledge thus gained. In the berry-garden, two tools for use with horse are necessary. One is a small share-plow, the share to be

kept sharp, for running between the rows of raspberries and blackberries, to cut off the suckers or young plants as they spring up between the rows. These are as easily destroyed as the tenderest weeds, if taken soon after they show themselves and while yet tender. To effect this, it will be necessary to run this plow through these rows about once in ten days during the growing season. But as this will take only about a half hour at each plowing, the work is a mere trifle. The red raspberry and blackberry plants should be allowed to occupy a space about two feet wide, and all plants appearing outside this limit should be mercilessly destroyed, like weeds, with the plow. The other implement is a narrow shovel-plow, either a single or a double shovel-plow will do, but the blades should be narrow, so as not to throw much dirt upon the strawberry plants which are plowed with it.

The strawberries should be allowed one and a half, and not exceeding two feet in width of strip. The grapes, currants and gooseberries can, of course, be cultivated with either one of the implements, as may be convenient. During the first summer, the strawberry rows should receive frequent cultivations with plow and hoe, or garden-rake, killing the young weeds as fast as they show themselves, keeping the ground in fine tilth, and directing the runners along the rows within the prescribed limits. Late in the season, if the rows are pretty well supplied with plants, the runners should be treated like intruders, and destroyed.

I have found no tool as useful in destroying very young weeds—and they should be destroyed as soon as they can be seen—as a steel-toothed garden-rake. When the sun shines hot, one or two hasty scarifyings of the surface will leave it as clean as the freshly-shaved face of a man. Any one who has not used this tool for this purpose, will be surprised at the rapidity and effectiveness of the work. Of course, the surface must not be allowed to become baked.

Of cultivation of other plants the first season it is not necessary to speak, as the frequent stirring of the soil and destruction of weeds required in the cornfield is all that is necessary, except a little pruning of the black raspberry and blackberry canes. These should be shortened by snipping off the tips with the thumb-nail or knife when about two and a half feet long. Cut or rub off all young canes from the grape vines but one, as fast as they appear, leaving the strongest one which starts near the ground, to grow, and tie this up occasionally, but not pruning it. No stems of asparagus or rhubarb should be taken off during the first year.

In late Autumn or early Winter, as soon as a little crust has frozen over the surface, the strawberry beds should be covered with some convenient loose material containing no seeds of weeds or grass. Oat straw, slough hay, corn-stalks, leaves or litter from the horse stable, where only prairie hay is fed, are suitable. The mulch should nearly hide the foliage—not thick enough to smother the plants. The raspberry, currant, gooseberry, asparagus and rhubarb rows should also receive a dressing of manure (having mowed and removed the asparagus), placing the litter well in among the canes of raspberries. In late Fall cut back the canes of the grapes to within two or three feet of the ground, lay them down and cover with earth one or two inches deep.

CULTIVATION AFTER FIRST YEAR.



N the Spring as soon as the ground is dry enough to pulverize nicely, cultivate with the horse-implements all the spaces, letting the tongue-plow run pretty deep in the center between the rows of strawberries, level the surface with rake or one-horse harrow or diamond-toothed cultivator, open the mulch from the strawberries, leaving it along the edges of the rows to keep the fruit from the ground and prevent dirt from spattering over them during rains. Now, let the strawberry rows rest till after the fruit is gathered, but frequently plow the other plants till their berries begin to ripen, then suspend work on them till the berry season is over. Immediately after the strawberries are gathered the mulch may be temporarily laid back on the center of the rows of vines or entirely removed, and the tongue-plow run deeply in the center of the space between the rows, then the small share-plow used to turn a back-furrow into the track of the shovel-plow cutting the row of plants down to ten inches or a foot in width, and the ridges leveled with cultivator or rake. The coarser portions of the mulch may be placed in the centers of the spaces or altogether removed and piled up for use again. The runners will soon occupy the bed thus prepared for them with plants which should again be kept in the limits allotted to the strips. Weeds which start up among the plants may be pulled out and the spaces kept in good condition with plow and hoe or rake through the season. This course may be repeated with the strawberries year after year. There will be no necessity of entirely renewing the plantation, as by narrow-

ing the rows as much as possible without rooting up their centers they will renew themselves substantially, without the trouble of re-planting. Mr. Hatheway, of Ottawa, Ill., one of the most successful strawberry growers, renews his plants entirely by plowing so as to leave the narrow strip alternately on either side—as in the even years on the east side the fruiting row and in the odd years on the west side. This renews every year and is a plan well worth practicing upon. Thin out the weaker canes among the red raspberries, leaving the stronger ones eight or ten inches apart along the rows, which may be continuously kept two feet wide. Clip off the ends of the canes of the previous years' growth to three-and-a-half feet high. It is not advisable to clip the *young* canes of red raspberries; but black-caps should be clipped *while growing* to about three feet, clipping but once.

Blackberry canes should be stopped when they reach a height of three feet, and again after they have extended their growth; at the second clipping shorten the side branches to about one foot of the canes, and clip the extended canes to about six or eight inches above the previous clipping. Of course this second clipping is not absolutely necessary, but it will pay largely for the time spent in larger, better fruit, and usually in quantity also.

The canes which have borne fruit—both of raspberries and blackberries—may be cut out at any time; but this work is usually deferred till Winter, as there is more leisure time then. If the planter decides to have two rows of blackberries—dispensing with two rows of the strawberries to make room for them—the space between the two rows may be covered early in the second year with mulch which when settled will be six or eight inches in depth. Although this involves considerable labor, yet it is a profitable investment as it saves cultivation—keeping down all weeds—and keeps the ground damp during dry weather in Summer, thus insur-

ing the crop against damage by drouth. Old stack-bottoms, straw, coarse horse-stable litter or any other material at hand except that containing foul seeds may be used for this. This mulching may be renewed once in two or three years as needed, and is all the cultivation required for blackberries except an annual light sprinkling of manure along the rows among the plants. Red raspberries may be treated in the same way where several rows are planted, though cultivation is better.

Where fruit only (not plants) is the object the black raspberry canes should receive a second clipping of the tips late in Summer, to prevent them from taking root.

Give the black-caps, currants and gooseberries annual dressings of manure; currants, especially, pay large dividends for fertilizers. Thin the stools of currants and gooseberries to three or four stems each, cutting out the oldest and leaving only strong one-and-two-years-olds.

The blackberries send out long, rambling roots, which are liable to throw up shoots even across the spaces in the adjacent rows; hence I have placed them between the grapes and currants in the plat, so that suckers (young canes) may be more readily destroyed than when among the gooseberries or strawberries. These young estrays, both of red raspberries and blackberries, *must be destroyed* as fast as they show themselves, and then the ramblers will become discouraged and give up the chase; but, if not kept in check they will soon become "masters of the situation," and hard task-masters too.

GRAPE CULTIVATION.

There has been so much nonsense written about the cultivation of Grapes that most people believe a special education or indoctrinating, is necessary to successfully grow them; whereas no species of fruit will pay a lazy or heedless man so well for neglect or abuse as a vine of one

of our most hardy sorts of grapes. Give a Concord, or one of Rodgers' hardy vines a good foot-hold in a good soil and a chance to hold its head up out of the weeds and grass and it will shame any sluggard by loading itself with good fruit; but, trim the vines, "dig about them and dung them," sprinkling a little lime over the soil, if convenient, and they will show that they appreciate the labor of willing hands, and will produce such great clusters of large, delicious berries, as will please the eye, gratify the palate, cheer the heart and bring health and strength of body to all partakers. No fruit can be produced so cheaply, according to its real value as food.

Cut out at their bases all shoots, except two to each plant, leaving those which start out nearest the surface of the ground, and tie these to the fence, one in each direction. Late in autumn cut out the old wood near where the canes started, also shorten the two canes about half their length, and shorten the side branches to within three buds of the cane. The length of the cane is not essential, as if long enough to lap by those of the next vine, they can be tied, the next spring, above or below, so as to give room for fruiting; cut the canes loose from the fence, letting them drop upon the ground, holding them down with little sticks stuck in the ground, and cover them with two or three inches of dirt.

In the spring, as soon as danger from hard frosts is over, uncover and tie them up; when the fruit is forming it is well to stop the extending growth by pinching off, leaving one or two leaves only beyond the third cluster. They will then give larger clusters than if not stopped.

If fowls run at large the grape vines must be trained below the top of the picket fence, else they will alight upon the vines and so pass into the inclosure. If, however, it is desired to train the vines to top of the fence, a small wire or strong twine may be stretched three inches higher, which will effectually turn the fowls back when they fly against it.

It will be seen that no space has been left for a roadway through the plat. There is no need for one, as the manure and mulch may be thrown over the fence at each end and distributed by use of the wheelbarrow, or a horse may be attached to a stone-boat, which will easily pass between the rows. I have found this latter method convenient and expeditious

THE RESULTS.

COST OF PLAT FOR EIGHT YEARS.



EIGHT years, this plantation should last (though the fence should last twelve years). We will, therefore, estimate the entire cost for eight years, and the value of the crop for seven years.

Manuring first Spring.....	\$3 00
Fitting ground.....	1 50
Forty-four Grape plants at five cents.....	2 20
Seventy-five Red Raspberry plants at two cents.....	1 50
One thousand Strawberry plants,.....	4 00
Thirty-five Gooseberries.....	1 50
Fifty Currants at five cents.....	2 50
One hundred Blackberries	3 00
Sixty-seven Asparagus roots.....	1 50
Thirty-five Rhubarb roots, five cents.....	1 75
Planting, four days.....	5 00
Fencing, with durable fence.....	35 00
<hr/>	
Total outlay first year.....	\$62 45

Of course the crop of the second year will not come up to an average, except that of strawberries, but the estimates

will be low enough to allow for only one-third to one-half crop for this year.

Labor (excepting picking the fruit) eight years at \$12 per year... \$ 96 00
 Manure seven years, at \$5 per year..... 35 00

Total cost (rejecting fractions) for eight years.....\$193 00

VALUE OF THE PRODUCTS.

In estimating the amounts of fruits we will, for safety, and to allow for casualties, place the products below the general average, and also the value of the fruits somewhat below the average value of such fruits on the vines and canes, ripened and ready for picking. As a general rule the housewife and children, if there are any, will esteem it a pleasurable pastime to pick the berries.

Grapes, 300 lbs. at 3c per lb.....	\$ 9 00
Red raspberries, 60 qts. at 8c.....	4 80
Black raspberries, 30 qts. at 6c.....	1 80
Strawberries, 400 qts. at 6c.....	24 00
Currants, 20 qts. (off stems) at 7c.....	1 40
Gooseberries, 20 qts. 2c.....	40
Blackberries, 200 qts. at 6c.....	12 00
Pieplant.....	3 00
Asparagus.....	4 00

Value of annual crop (rejecting fractions)..... 60 00

Total value of seven crops.....\$420 00

Deducting cost (\$193.00) leaves a net profit of..... 227 00

What other branch of agriculture will yield a net profit of sixty per cent.? Is it not, then, cheaper for landowners to *raise* the fruit for their families than to buy? The time and trouble of purchasing is nearly or quite equal to that of picking the fruit. Another fact should be always considered: the far greater excellence of freshly-gathered, well-ripened fruits over those found in the markets, which are seldom fresh, frequently only half ripened, and not infrequently stale and unwholesome, producing acidity in the stomach rather than promoting healthy digestion.*

*I trust the reader will excuse the writer for repeating and emphasizing this point; for though the *money value* of such a crop as described is far greater than the cost, yet this consideration sinks into insignifi-

DISEASES AND INSECTS.



UT little need be said of the diseases or of the insects preying upon the plants of the family fruit-garden; for ordinarily Nature will furnish her own remedies for the latter in a short time, in the form of predaceous beetles and parasitic insects, or in the recurrence of seasons, which, by the extremes of wet or dry, cold or heat, their numbers will be decimated if they are not entirely swept away. It is not always policy, however, to wait for dame Nature to do this work, as she is sometimes tardy in coming to the rescue. A brood of chickens, but more especially of young ducks allowed the "liberty of the yard," with their hen-mother cooped in the garden, will destroy immense numbers of strawberry worms and raspberry worms—the larvæ of saw-flies—besides various other insects which infest the roots or foliage of plants. It is well to let fowls have free access to the plat in spring, until the strawberries are nearly grown, after which time until the last grapes are gathered they should be carefully excluded.

If the orange rust appears upon any canes of blackberries or black raspberries, these should be at once dug up and burned. It will be readily known by its bright color.

cance when compared with that of the *health* of the bodies, and the *content* and *enjoyment*, of the greater attractions of home and its surroundings, which such a garden and the free use of its fruits brings to its inmates. It doubtless seems strange that one whose principal business is to raise such fruits to sell in the markets should advocate and urge this point; yet a long experience, with close observation, has convinced him of the truth of these statements; and *truth*, coupled with a desire to increase the sum of human happiness, is a far higher consideration to him than the acquisition of money. And he trusts the time will soon come when the fruits adapted to growth in any locality will only be *sold* to those who are so situated that they can not raise them for themselves.

HOW TO USE FRUITS.



DOUBTLESS it has occurred to the reader that the amounts of some of the species of fruits named are too great—more fruit being mentioned than a family will use. Well, the writer must admit that the quantity of most kinds mentioned is greater than an average family of eight persons who buy their fruit consume, but, allow him to say to such that you do not know how much fruit your family would consume to their own advantage, that of the purse of the “lord of the manor” and not that of the doctor, were an abundance always at hand. For instance it is the custom of the writer during the grape season to go out early each morning and bring in an ordinary market basket full of grapes for free use as dessert, and for any member of the family to eat when inclined.

The basket is always empty the next morning, and, in fact, it is no unusual sight to see it on the arm of one of the female inmates of the household, toward evening, on its way to, or returning from the vineyard; and such a discovery is a pleasant one.

During the entire range of the berry season, freshly gathered fruit should be upon the table at each meal in abundance and without the addition of sugar, allowing each member of the family to prepare it to suit his or her taste. And then the delicious berry short-cakes, that the skillful housewife knows so well how to prepare, are sure to make a part of each dinner or supper; the puddings, thick with luscious fruits; and the pies, plump with berries and devoid of swine’s fat in their pastry, are fit to tempt the appetite of the epicure, without doing violence to his stomach.

The Canning of fruits has become so common, and is so well understood that, in a treatise like this, it would be superfluous to describe it. Let it suffice to urge the liberal preservation of fruits in this way, so that their use, during the entire time when they can not be placed fresh upon the table, may be as free as the use of flour or potatoes.

Drying Fruits.—Increased attention is given, year after year, to this cheap and easy mode of preparing fruits for future use. The former custom of drying in the sun, or open air, is giving way to the much more expeditious and better practice of drying rapidly by artificial heat. This reform in the mode can not be too highly commended.

By the slow method of drying by exposure to the open air, the fruit loses much of its characteristic aroma, to say nothing of its acquiring an objectionable flavor from the deposits of numerous insects which are sure to swarm upon it; and, besides, oxygenation takes place upon its surface from such exposure, and this is nothing more nor less than decay, the beginning of the rotting process, which is only arrested by the evaporation of the juices (or water contained in the fruit). This damaged condition of the fruit is more readily seen in the white-fleshed fruits, as apples and pears.

The discoloration produced by exposure to the air in drying, is the beginning of decay, and, consequently, such fruit is not altogether wholesome. A single test, by tasting such fruit and the same variety dried quickly by artificial heat, as in the Alden process, will convince any one of the great advantages of the latter, quicker mode. The first flavor detected in tasting the ordinary dried apples of the market, is that of rotten apples. To prove this, alternate the test with a very small portion of rotted apples, and the similarity (or rather identity) will at once be detected.

For drying small quantities of berries, the oven or heating-chamber of an ordinary cooking-stove or range, answers a good purpose. Any contrivance by which a current of air

heated, from 100° to 160° Fahr., will accomplish the purpose, the object being to introduce the fruit, as soon as possible, into an atmosphere of about 160°, which will suddenly close the exposed pores of the surface by evaporation, and thus prevent the oxygenating or rotting. Fruit thus treated is much richer, and more nearly resembles the fresh fruit of the same species than that dried in the old way. The practice in the family of the writer is, almost invariably, to dry on ordinary drying or shallow baking-tins, and to give a sprinkling of sugar over the fruit when first put in the drying-chamber. Fruit dried, or rather reduced to a pasty state, similar to that of the tamarinds of the markets, is often if not generally preferred to canned fruit of the same variety. Again, the quantities of jams, jellies, marmalades, catsups, and spiced fruits of the various kinds which the provident housewife will prepare and store away—and which will be devoured, too, by the time the year has rolled round—will furnish a profitable home market for no inconsiderable portion of the crop.

There is another use for fruits, mention of which ought not to be omitted here. The only real *use* of anything in this world is to add to the sum of human happiness; and, this being so, what can be more gratifying than to be able to allow the children of a poor neighbor to come and pick a few berries to carry home as a rare treat for themselves and their parents? And more than this, what pleasure it gives to send a dish of fresh, appetizing strawberries, blackberries or grapes to the chamber of the sick. Truly, in all such acts the receiver is made happy, yet the giver is still more blest; for “it is more blessed to give than to receive.”

A FEW WORDS ABOUT CHERRIES.



CHERRY trees have no place in a berry patch, yet the fruit is classed as one of the small fruits, and its uses are so similar, that a few words relative to it, are in place here. A few trees of early Richmond cherry, planted near the house, usually pay a larger dividend on the money and labor invested, than any other tree whatever. If to be planted where a few sprouts from the roots are not objectionable, trees on morello stocks should be selected, as they bear very young often in the nursery rows, and always bear full crops. Sprouts may be kept in check by cutting just above the surface, about twice a year, and are usually, when thus treated, but little troublesome.

Trees on mahaleb stocks grow faster while young, make larger trees, do not sprout from the roots, and the fruit is of good size, and in every way equal to this variety on morello stocks; but the trees do not begin to bear until four years after transplanting, while those on morello stocks begin in two or three. A half dozen trees should be planted so as to make provision for the birds and have a good supply for the family besides. These cherry trees, and also the fruit, are almost entirely exempt from diseases and depredations of insects—"our friends the birds," being almost the sole depredators, and they are only "taking toll for the songs" they give us. The fruit is so easily prepared for use with the little cherry-pitter, and adapted to so many uses in the family, that wherever there is room for fruit trees about the house, they should be planted to the number mentioned, at least. No species of small fruit is more generally relished when canned than the cherry; and, certainly, there is no species of fruit which, when dried to a pasty state, as described, retains so much of its original flavor. It is often preferred to canned fruit.

THE END.

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