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HOME GARDENING AND CANNING

Prepared by the Committee in charge of a Special
Scheme to Encourage the Teaching of Elementary
Horticulture and Agriculture in the Rural
Schools of Carleton County.

INAUGURATED IN THE SPRING OF 1915.

Secretary :

L. H. NEWMAN

CANADIAN SEED GROWERS' ASSOC

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HOME GARDENING ^{AND} CANNING

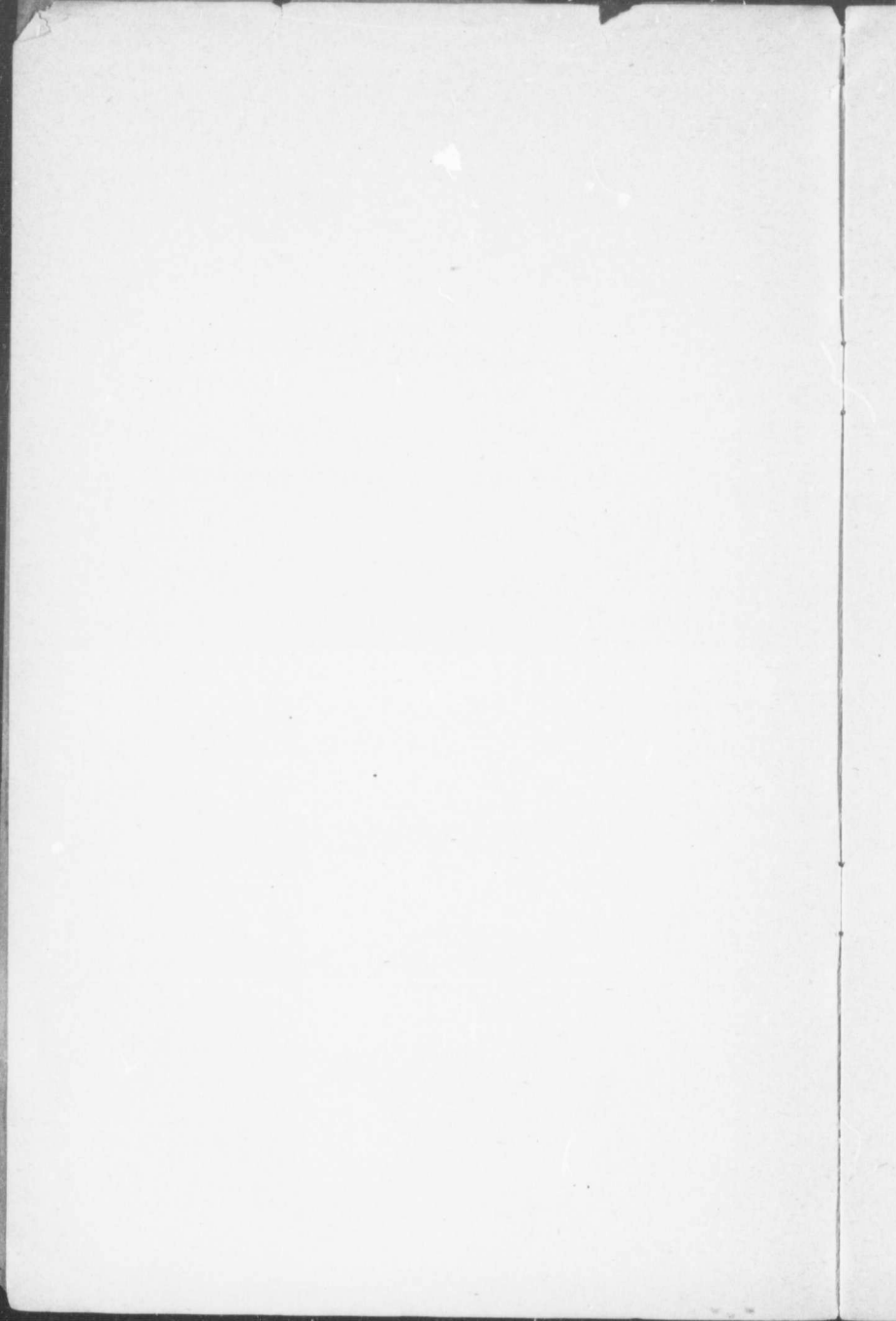
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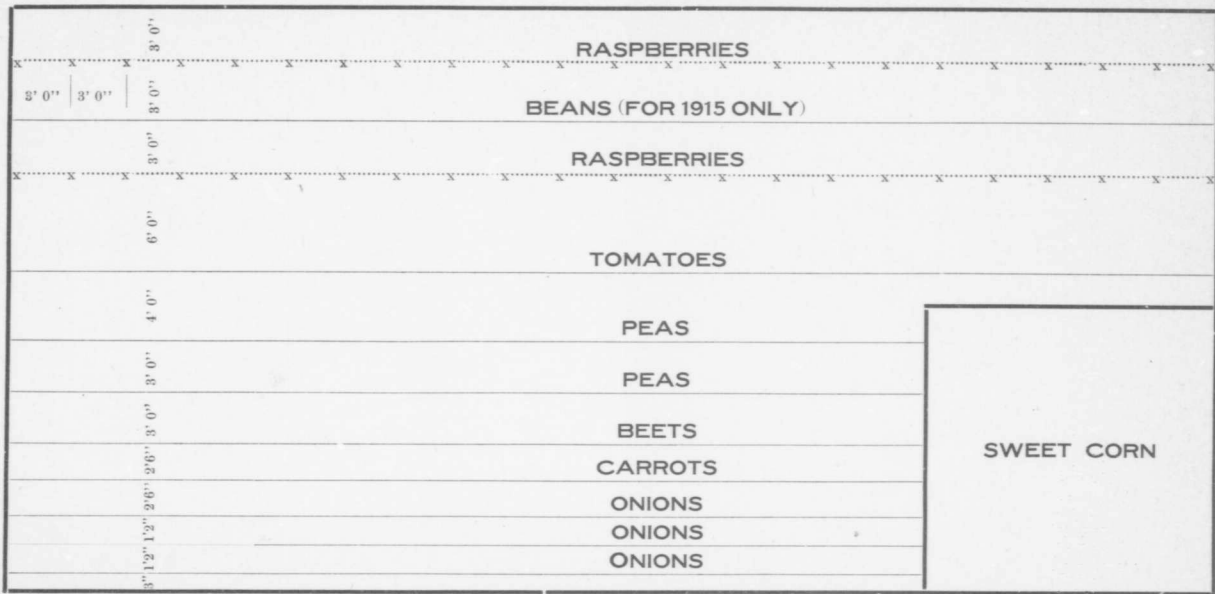
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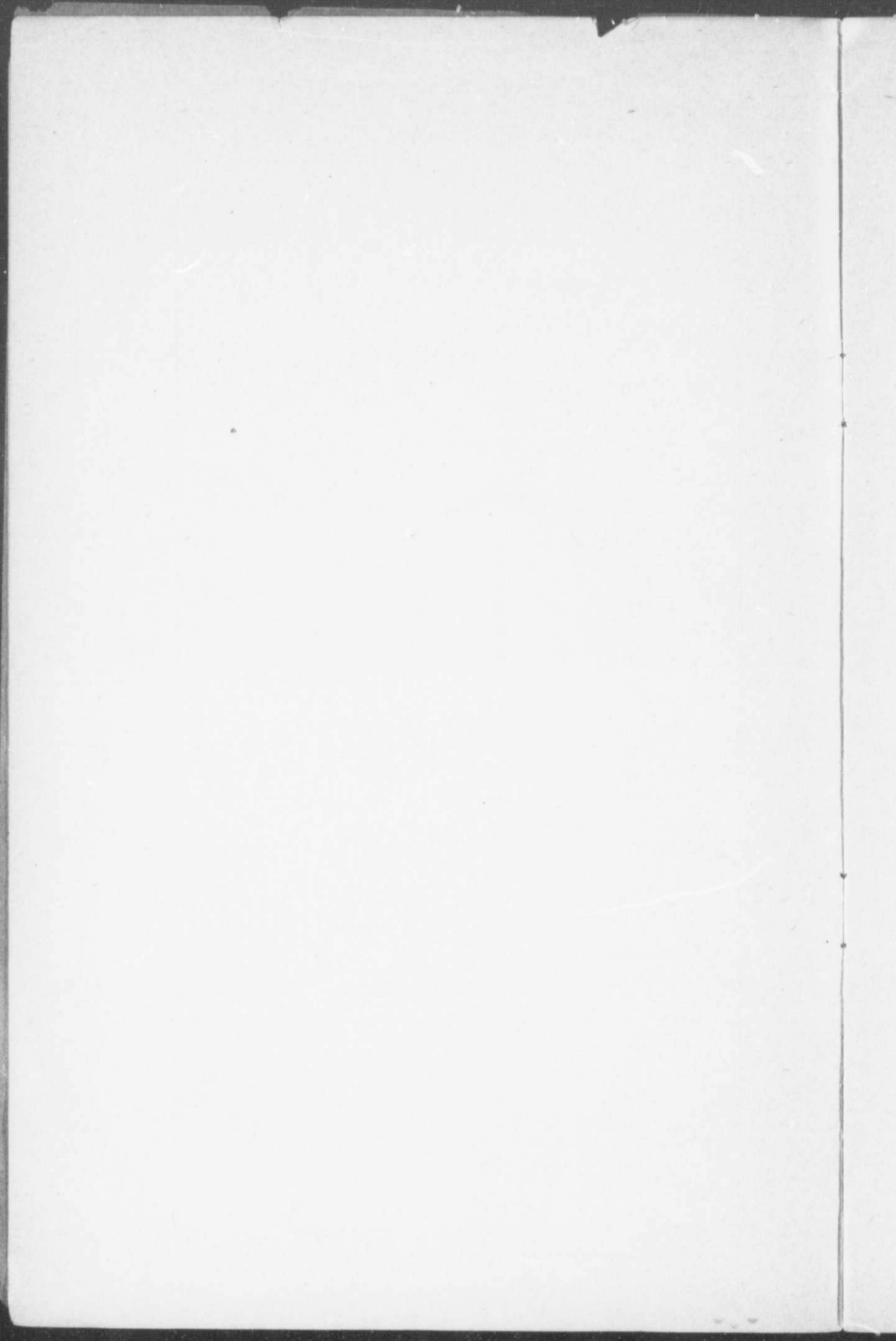
CANADIAN BUILDING, OTTAWA





SUGGESTED PLAN OF GARDEN

(1.20 OF AN ACRE)



RASPBERRY CULTURE.

The Soil and its Preparation : The red raspberry succeeds best in a deep, rich, loamy, cool moist soil. On light soils and in soils which are liable to dry out in summer the crop will be much lessened in a dry time and the growth of the canes or stalks will not be strong, hence the crop will suffer the next season. The better the soil is prepared before planting the better the results will be. Deep ploughing and liberal manuring are important. If there has been a hoed crop the previous season it will help to make good conditions for rapid growth. If the sub-soil is hard it should be loosened to enable the roots to get down where there is a regular supply of moisture, which is important in dry weather.

Planting : As soon as the young raspberry plants are received, if they cannot be planted at once, a trench should be opened in the soil near where they are to be planted. This trench should be deep enough to allow the roots to be well covered with earth and long enough to permit the plants to be spread out so that the soil will come in close contact with the roots of all the plants and prevent their drying out. Soil is then put over the roots and tramped down closely around them. If it is possible, however, it is best to set the plants in their permanent positions as soon as they arrive. A line should be used to get them straight, a piece of binder twine will do for the purpose if a better line is not available. The plants should be set three feet apart in rows six feet apart. The first row should be three feet from the outside edge of the plot and the second six feet in from that. The first plant should be set three feet from the end of the plot. After making places every three feet along the line a hole should be made large enough and deep enough so that when the soil is put back the roots will be well covered. From four to five inches in depth is about right. After covering with soil the latter should be tramped with the feet to bring it in close contact with the roots. The second row is now put in in the same way. After planting, the surface soil should be loosened and levelled with a hoe or rake so that moisture will not evaporate so rapidly as it otherwise would, and in order to have the rows look neat. The surface soil should be kept loose throughout most of the summer to obtain as rapid a growth as possible. No fruit need be expected the first season.

Care of Plantation the Second and Third Seasons: The raspberry grows from the same root year after year but is multiplied by numerous suckers which spring up all around the main root. While the same plant remains from year to year the canes which bear the fruit are not so permanent. They grow one year, bear fruit the next year and then die; they should then be cut out and the new shoots which have grown up allowed to take their places. The canes which grow in 1915 are not likely to be strong enough in most cases to bear much fruit in 1916, but those who get the best canes are likely to get the best crops. The best success will

be obtained by keeping most of the suckers hoed out since, if allowed to develop, they will crowd the roots too much. If it is desired to enlarge the plantation or to give plants away some of the suckers may be spared for this purpose. The second year it will be necessary to do some pruning or thinning out of the canes. This consists in cutting out the dead canes and the weaker of the newer ones after the fruiting season is over, leaving from four to six of the strongest canes to each plant. If the canes make very strong growth say six or more feet in height the second year, it will be a good plan before growth begins the following spring to run a wire along each side of the rows about four feet from the ground to keep the fruiting branches off the ground. An annual application of well rotted barnyard manure will help to keep the soil rich which is necessary if good crops are to be obtained.

The **Herbert** raspberry is a heavy bearer. The best yield at the Experimental Farm was 50 lbs. 12oz. from two rows each 18 feet in length, which is at the rate of 10,234 lbs per acre. From two rows of 66 feet each in length nearly 200 lbs. may be obtainable by the third year and repeated each year afterwards.

STRAWBERRY CULTURE.

The Soil and its Preparation: Soil similar to that recommended for raspberries should be selected. Strawberries have shallow roots, and therefore do best where the soil is moist and the fertility near the surface. Thorough preparation of the ground is very essential. Where possible, strawberries should follow a hoed crop, such as corn or potatoes. The best time to fertilize the patch is before the plants are set.

Planting: The best plants for setting are the strongest young plants which have established themselves on the outside of old rows. The ground should be ready for setting out the plants when these are dug or received from the nurseryman. If the ground is not quite ready, the bunches should be opened and plants placed in layers about 2" thick in a trench dug for the purpose. The soil should then be firmly pressed around the roots as high as the crowns, and should be watered frequently, so that the roots will not dry out. Care should be taken, however, not to water too much, as the plants are likely to heat and to be injured. Before setting, the roots should be trimmed back to about 3". It is very important that the roots be moist when the plants are set in the ground. A good plan is to carry a pail of muddy water into which the roots may be dipped before being planted. The roots should be spread out and the soil firmly pressed around them. The crowns should come even with the surface of the ground. A satisfactory method of planting strawberries is to plant in straight rows, about 3½ apart, the plants being placed from 20 to 24" apart in the rows.

Fertilizers: The best fertilizer for strawberries is well-rotted stable manure, and this should be most liberally applied, many noted growers asserting that on a sandy soil especially too much manure can hardly be applied. This should be thoroughly worked into the soil.

Cultivation: One important point in maintaining a strawberry patch is that of constant cultivation. It is too often the case that after the first crop has been taken from the patch, cultivation is neglected and consequently a harvest of weeds chokes and practically ruins the second crop which should, if constant care has been given, yield more than the first, although the average size of fruit may be a trifle smaller.

Two crops are all that should be taken from the same patch.

Cultivation should be started very soon after the plants are set, but care should be taken not to cultivate too deeply or so as to disturb the roots, or to cover the crowns.

It is advisable to cut off all the runners of the newly set plants about the middle of June, so that the young plant may become strong and well established. All blossoms should also be removed from the young plants the first year for the same reason.

Mulching: After growth has stopped in the autumn, and before the ground freezes hard, the plants should be covered with straw or some other good mulching material. Stable manure is not recommended, as it is likely to contain weed seeds which will give trouble the following year. As soon as growth starts in the spring the mulch should be raked off the plants and left between the rows. This helps to keep the fruit clean at ripening time and also prevents the moisture from evaporating during the growing season. It also helps check the growth of weeds between the rows.

Renewing the Plantation: After the second crop of fruit has been taken it is desirable that a new plantation be started. The plants for this purpose may be obtained from the old bed by taking the strongest "suckers" or young plants produced nearest the original plant. The smaller suckers produced towards the ends of the vines should not be taken.

Varieties: There are a great many different varieties of strawberries, but any of the following are specially recommended for Carleton County at the present time (1915):—Senator Dunlop, Parson's Beauty, Williams, Lovett. Plants of these may be obtained from seedsmen or nurserymen.

VEGETABLE CULTURE.

Most kinds of garden vegetables are very easy to grow, but they need regular attention in order to get the best results.

Carrots, onions, and beets require richer soil for best results, than do tomatoes, beans and peas. Thorough working of the soil before the planting of the seed or the setting out of the plants will be well repaid by the better crops which will be obtained.

Carrots: In order to have nice, clean, shapely carrots, the soil should be of a loamy nature. In stiff soils they will be unshapely unless the ground is very thoroughly prepared and made as loose as possible by thorough working. There should be a good application of manure well mixed with the soil. The seed should be sown early in the spring in rows two and a half feet apart. When the young plants are large enough to handle they should be thinned to about two inches apart. If left much wider they are liable to grow too large. The soil should be kept thoroughly cultivated or hoed to keep down weeds, conserve moisture, and let the air into the soil. When hoeing, the soil should be drawn sufficiently against the plants to protect the roots from the sun, otherwise part of them will be sunburnt being green and unsightly. The best variety is the **Chantenay**.

Beets: Beets need about the same kind of culture as carrots. The seed should be sown early and the young plants thinned to from three to four inches apart. The **Eclipse** is one of the best varieties.

Onions: For onions the soil should be worked into a finer condition than for most vegetables. A good application of well rotted barnyard manure thoroughly worked into the soil is desirable, as onions need a large quantity of available plant food. The seed should be sown about $\frac{1}{4}$ inch deep in rows 14 inches apart. As soon as the plants are from three to four inches in height they should be thinned to from one to two inches apart. It is best to leave them somewhat thick as many of the plants are liable to be injured by the root maggot. After thinning, the soil should be at once cultivated or hoed quite shallow and the surface, henceforth, left loose during the growing season to destroy weeds and promote the rapid development of the onions. It is important to destroy the weeds when they are young in order not to disturb the onions. Onions are ripe enough to pull when the tops have died down, about one half. To ensure thorough ripening they must be planted early. As soon as the onions are ripe they should be pulled and left on the ground until they are dry and firm, turning them occasionally. The tops may be removed as soon as convenient after they have become dry. They should be stored in a cool dry well ventilated place. Two of the best varieties are **Red Wethersfield** and **Yellow Globe Danvers**.

The onion maggot is often very destructive, attacking the young plants below

ground when they are quite young. It is very difficult to control, but Carbolic Emulsion poured along the rows so that it will reach the roots is one of the best known remedies. The formula is Hard Soap well sliced, 1 pound; Crude Carbolic Acid 1 pint; boiling water 1 gallon, Dissolve the soap in water, then add the acid and churn violently with dasher. Before using dilute with water to make up 25 gallons. Where say 5 gallons or one fifth of 25 gallons is thought to be enough for a given patch of onions simply use one fifth of each of the above ingredients.

Peas: As soon as the ground is dry enough in the spring peas may be planted. They should be planted about an inch apart in rows three feet apart. If two rows are planted we would suggest planting an early and a late variety and two of the best are **Gradus** for early and **Stratagem** for late. The only culture needed for these varieties is to keep the surface soil loose on each side of the rows until the vines nearly cover the ground. Neither of these varieties grow tall enough to make it necessary to use any support for them.

Beans: Beans should not be planted before the middle of May as they are killed by very little frost. The usual method of planting is in rows from two and a half to three feet apart. The beans should be dropped about two inches apart in the rows and the plants thinned to 4" apart. All the cultivation needed is to keep the surface soil loose and free of weeds until the plants have practically covered the ground.

Tomatoes: Perhaps the most important thing about tomato culture is to get early fruit because if tomatoes are to be sold the early fruit is usually much the more profitable, even if grown for home use only, it is desirable to have tomatoes ripen as early as possible. The **Chalk's Early Jewel** and **Bonny Best** are two varieties which are recommended to grow in a competition as they are fairly early, very smooth and regular in shape, and good croppers. The **Spark's Earliana** is earlier but not so uniform nor so productive. A five cent packet will furnish all the seed necessary. Where a hot-bed is not available, we would suggest sowing the seed about first of April, a quarter of an inch deep in soil in a box or flower pot in the house. The pot could be filled with soil to within about an inch and a half of the top, the seed scattered over the surface and then about a quarter of an inch of soil scattered over and pressed down. The soil should then be kept moist but not wet. In about a week the young plants should appear and in about two weeks more they should be transplanted about two inches apart into boxes that could be kept in the window. By the time the plants crowd one another in the box, they could be transplanted into four or five inch pots, strawberry boxes or even tin cans so that they will go on developing into stocky plants, which will be coming into bloom when planted outside. The development of the young plants will depend upon the heat of the room. A moderately warm room is best. To keep the plants stocky they should be kept close to the window so they will get plenty of light. By the time they are transplanted into the pots it may be possible to find a place

outside for them in a wooden frame banked with manure, if the weather is still cold, and covered with a window at night or on cold days. A hot-bed is, of course, preferable to starting plants in the house and instructions on how to make one will be found in a pamphlet which may be obtained free at the Experimental Farm, Ottawa. Little will be gained by planting tomatoes outside before the first of June, as the least frost will injure them and they make little growth in cool weather. Tomato plants can be bought at reasonable prices and all trouble in the house avoided if necessary.

The soil for tomatoes should be only moderately rich. If the soil has received a very heavy application of manure the vines are liable to grow too rank and the fruit will not ripen early.

Tomato plants should be planted about four feet apart each way. If the plants happen to be tall and spindly they can be planted closer than if they are stocky, and thus prevent their being broken by storms, and roots will soon be thrown out from the sides of the stems. All that is necessary after planting is to keep the surface soil loose until the plants cover the ground, unless it is desired to tie the plants to stakes which will ensure finer fruit but not so much of it. By this method only one stalk is allowed to grow, the lateral shoots being pinched out as they appear, but leaving the flower clusters and all the leaves on the main stems, the terminal shoot, being tied to the stake as it grows. Stakes 5 feet long and about 1½ inches in diameter are needed.

Amount of seed required: The seed required for the area planted to each vegetable on the accompanying plan is: Peas ½ pound per row; Beans ½ pound; Beets 1 ounce; Carrots 1 packet; Onions ½ ounce per row; Tomatoes 1 packet. These are liberal estimates and should more than cover what is required. Fifty cents should pay for all the seed necessary.

Cut Worms: One of the greatest enemies to successful gardening is the cut-worm of which there are a number of species. By far the best preventative and remedy known is **Poisoned Bran**. The cut-worm remains in the soil during the day but at night comes out and cuts the plant off at the surface of the soil. As soon as the first injury occurs the poisoned bran should be applied. It is prepared by thoroughly mixing in the proportion of one half a pound of Paris Green with 50 pounds of slightly moistened bran, which is made more effective by adding a little molasses to slightly sweeten it. This is scattered along the rows of plants or about the plants on the surface of the soil and the cut-worms will eat this in preference to the plants and be killed.

Pamphlets on Vegetable Culture: The following pamphlets on the culture of various kinds of fruits and vegetables by W. T. Macoun, C. E. Farm, Ottawa, can be obtained free on application to the Publications Branch, Department of Agriculture, Ottawa.

- "Asparagus, Celery and Onion Culture".
- "Cabbage and Cauliflower Culture".
- "How to make and use Hot Beds and Cold Frames".
- "The Potato and its Culture".
- "Small Fruits".
- "Strawberry Culture".
- "Tomato Culture".
- "The Vegetable Garden" by W. Saxby Blair.

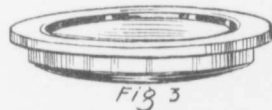
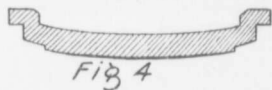
The Garden Plan : In the plan of the garden which has been prepared as a suggestion for the laying out of a garden plot, only the raspberries and the vegetables which it is necessary to plant in the competition are given places but if other vegetables and fruits are grown, some changes would, of course, have to be made. If parsnips and turnips were grown, the rows of beets and carrots could be shortened by one half to make room for them. Lettuce could be grown in a row half way between the tomato row and the row of raspberries. By growing one row of onions instead of three, a row of cabbage could be planted two and half feet from the row of carrots. Seed of cucumbers, pumpkin and squash could be planted about the end of May in hills about six feet apart between the two rows of peas. After the peas are picked the vines would occupy the space. It would be necessary to pull a few vines of peas near the hills so that the young plants will not be smothered.

THE CANNING OF FRUIT AND VEGETABLES.

FRUIT.

Fruit may be preserved in two ways. The more common method is known as "preserving"; the less common as "canning." By the 'preserving' method the fruit is *boiled* in sugar and water, as a result of which much of the flavor is lost in the escaping steam. Preserves are also of necessity excessively sweet and thus not so well liked by many people. These objections are avoided by the 'canning' method, and thus much is added to the value of the fruit. Since the ordinary method of 'preserving' is well known to all housewives, it will not be dealt with here. Attention will be directed rather to the 'canning' method which it is desired to encourage.

The "Canning" method of Preserving Fruit: By the canning method of preserving the fruit may be kept whole, which indeed is one of its chief advantages. In canning, the sugar solution is not the "keeping" agent as in 'preserves,' but it is the entire exclusion of air from the fruit that preserves it. The greatest care must therefore be exercised to have all the jars true and in perfect condition. To this end each jar should be tested. This is accomplished by partly filling each jar with water, placing the cover on tightly and turning the jars upside down,



Style of jar recommended for canning purposes. Note concave form of cover designed to reduce air space inside.

allowing them to remain in this position for about five minutes. If any water oozes out, the jar is unsuitable for canning purposes and should be set aside for other uses. The most satisfactory type of jar is the one here illustrated. It will be noticed that the covers are concave in shape and so curve down into the top of the jar leaving practically no air space. New rubbers should always be used each year.

In canning fruit only sound, well ripened but firm fruit should be used. Pick early in the morning and keep in a cool place ready for use. Prepare a sugar solution or 'syrup' for the fruit. For sweet or slightly acid fruits such as raspberries and strawberries two measures of sugar to one of water will be about right. This will require about eight ounces of sugar to each quart jar of fruit. For more acid fruits, such as cherries, gooseberries and currants, three measures of sugar and two of water may be required. In this case about twelve ounces of sugar will be required for each quart of fruit. For a quart jar about one half a pint of the 'syrup' will be required.

The fruit should be carefully cleaned and picked the same as though it were to be stewed, and should then be packed lightly in the jars even with the top. The syrup, after boiling for five minutes and then being cooled, should be poured slowly into the jar until this is completely filled. The covers of the jars are then put on but are not sealed tightly until later. The next step is to thoroughly sterilize the jars and their contents so as to kill all germs and also to "cook" the fruit. A convenient method of doing this is as follows :—

Take an ordinary wash boiler into the bottom of which place a few thin pieces of wood or laths tacked together crosswise. Place the jars on this framework and add enough hot water to have it come up to within about two inches of the top of the jars. Cover the boiler, place on the stove and allow the water to *boil slowly* for twenty to thirty minutes, in the case of berries, after which the jars are sealed tightly and left for another ten to twenty minutes in the hot water. In the case of the more acid fruits, such as those already mentioned (strawberries, currants and gooseberries), it is advisable to again place the jars in the boiler the second and third days, after loosening the covers, and then boiling for from ten to twenty minutes each day. During the intervening twenty-four hours the jars should be kept tightly sealed in a *warm* place, so as to encourage any of the bacteria which have not been killed to develop and thus to be more easily destroyed when boiled a second or third time. The tops should then be thoroughly tightened and the jars turned upside down for a few minutes to make sure that they are absolutely tight, in which case they are set away in a cool, dry place as far from strong light as possible. Canned fruit should always be opened two or three hours before being used as the oxygen of the air gives the fruit a finer flavor.

VEGETABLES.

The method of canning most of the vegetables is very similar to that practiced in the canning of fruit except that a longer boiling period is required. In this case, as in fruit, the exclusion of air from the jars is absolutely necessary for successful results.

Tomatoes: Tomatoes, which are really a fruit although considered here as a vegetable, may be successfully canned *in the oven*. Nice shaped, sound, ripe but firm tomatoes should be chosen, and over these pour boiling water for five minutes to loosen the skin, which should then be peeled off. Do not cut the tomatoes except where it is necessary to get them into the jars, but pack them into the jars as closely as possible, sprinkle very lightly with salt and fill with fresh, cold water. Set the jars (uncovered) in the oven, on the iron grating, *not* flat on the bottom of the oven.

Let them cook in a moderate heat until the tomatoes are soft, but not broken up (about 30 minutes), after which the jars will be only about three-quarters full. Draw them out on to the oven door, if it drops down, or on to the end of the stove—not on to anything cold—and fill the jars to overflowing, emptying one jar to fill the others. If you use a large spoon and lift them carefully they will break very little. Put on the rubber rings and covers, which should be washed in hot water, and put on while still hot; screw covers very loosely and return at once to the oven for fifteen minutes. Then, as each jar is taken out, screw the cover as tightly as possible and set on something warm to prevent bottles cracking.

When cold, tighten covers again and set away in a dark place. Tomatoes done in this way keep their shape much better than if boiled. If more convenient, however, tomatoes may be boiled and handled in the same manner as that described for berries, except in this case a longer time will be required. Thus, 30 minutes is recommended before sealing tightly and 30 minutes after sealing the first day. On the second and third days they should be boiled one hour each day, the top being loosened to permit steam to escape.

Beets: Select young round beets, not more than two inches in diameter, scrub clean, being careful not to break the skin, and boil until tender. Then put in a saucepan the following ingredients:—

- 1 pint malt vinegar,
- 1 pint water,
- 1 cup sugar,
- 1 tablespoon salt,
- $\frac{1}{2}$ teaspoon ground pepper,

and when this is boiling drain the water off the beets, peel off the skins and pack

at once, hot, into the glass jars. When the jars are full, cover with the boiling liquid until it overflows, and seal at once. When cold, screw covers as tightly as possible. Any of the liquid not used may be kept until another time and reheated.

Beans : Select tender beans (wax preferred), without strings, wash and remove ends. Cut in two or three pieces and pack as closely as possible in clean glass jars. Sprinkle with salt and fill the jars with cold water, putting the covers on *loosely*. Put them into the boiler so that they do not touch each other, and pour cold water into the boiler until it is within one inch of the tops of the jars. Bring to the boiling point and boil for three hours, then uncover the boiler and screw the jar covers on tightly. It is not necessary to lift them out of the boiler, which should be allowed to cool. The next day loosen covers and boil again for two hours, having the water in the boiler the same height as before. Then screw the covers tightly and remove from the boiler. When cold, see that the covers are as tight as possible and put away in a cool, dark place.

Do not try to do them with one boiling, otherwise they will mould. If boiled for one half hour in a saucepan first, the time of the first boiling in the jars may be reduced to two hours.

Preserving Rhubarb in raw condition : Cut fresh rhubarb into small pieces, fill in gem jars very lightly. Pour over this water that has been well boiled and then cooled until quite cold. Fill bottles to overflowing, then seal down tightly. When wanted stew as fresh rhubarb.

JUDGING FRUITS AND VEGETABLES AT EXHIBITIONS.

In judging canned fruits and vegetables at exhibitions the judge first considers the general appearance of the jars, the neatness of the labels and the arrangement of the food in the jar. The flavor and the color are then considered next. The score card commonly used by experts allows the following number of points for a perfect exhibit :—

Package	4 points.
Flavor	4 points.
Color	2 points.
Total	<u>10 points.</u>