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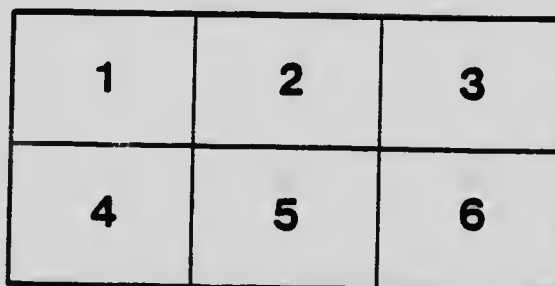
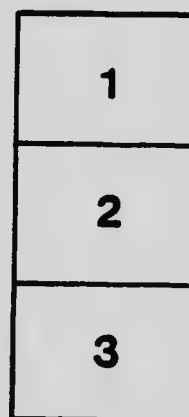
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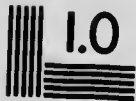
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# Ontario Department of Agriculture

WOMEN'S INSTITUTES

BULLETIN 252

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## THE PRESERVATION OF FOOD

### Home Canning

Compiled By

MISS ETHEL M. CHAPMAN



Canned vegetables in good types of jars.

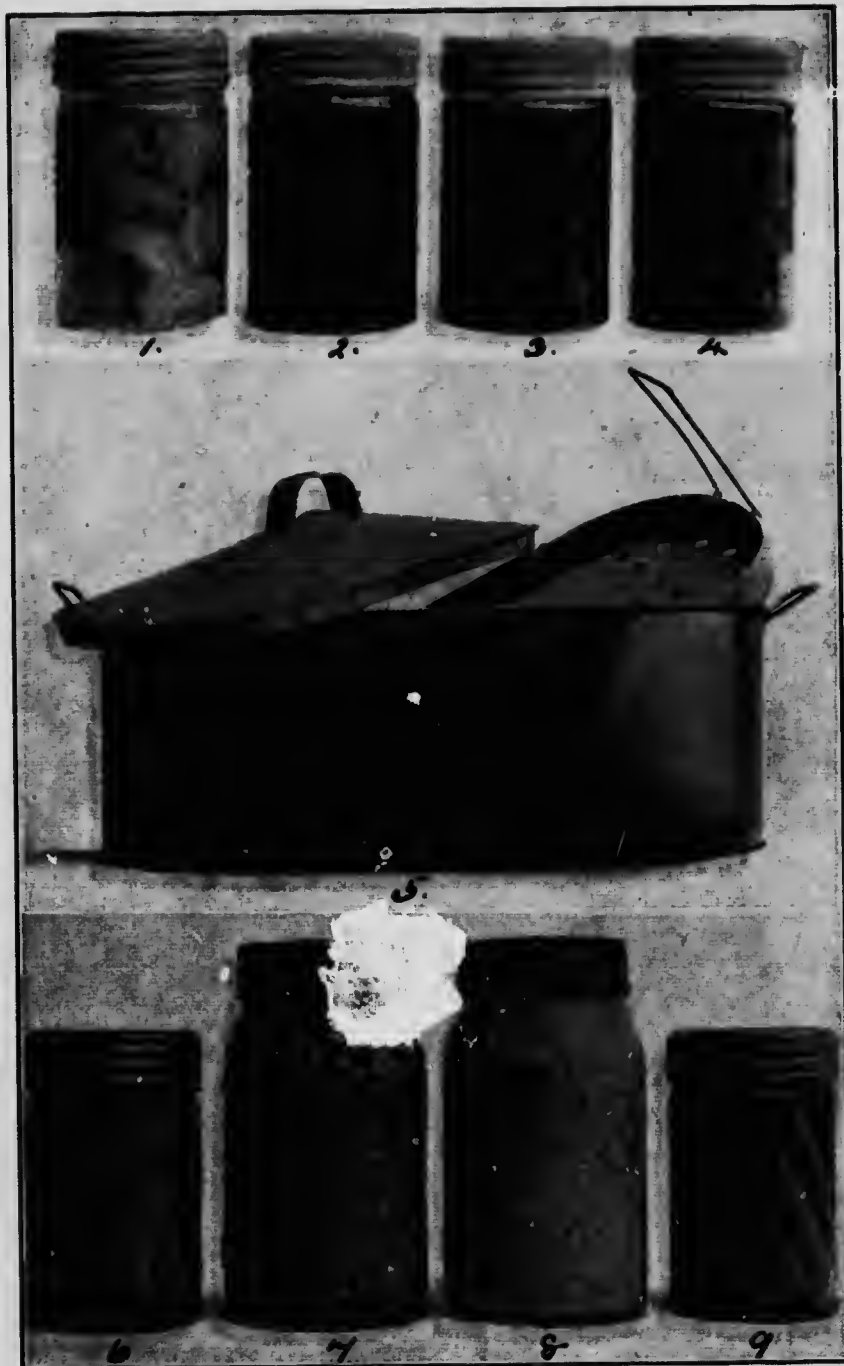


Canning surplus chickens in the Fall.

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TORONTO, ONTARIO, JULY, 1917



1. Pint jar of peaches. 2. Pint jar of raspberries. 3. Pint jar of strawberries. 4. Pint jar of cherries. 5. Wash boiler fitted with perforated false bottom, used for sterilizing jars of fruit and vegetables. 6. Pint jar of butter beans. 7. Quart jar of green peas. 8. Quart jar of young corn. 9. Pint jar of asparagus.

# Ontario Department of Agriculture

## WOMEN'S INSTITUTES

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# The Preservation of Food

## HOME CANNING

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### IMPORTANCE OF PRESERVING FOOD IN THE HOME.

The urgent need of conserving every ounce of food produced this year makes the matter of preservation in the home of special importance. By the canning or drying of fruits and green vegetables and the proper storing of winter vegetables the waste common in ordinary years can be reduced to almost nothing.

The reason for having a supply of fruits and vegetables the year round, is not merely that they give variety to the diet. Besides the food value of the starch and sugar which they contain their mineral matter and fibrous material give them an important health value. In families where the diet is poor in vegetables and fruits, or where these are abundant for only three or four months of the year, recourse to medicinal help is more frequent.

A garden of from one-quarter to one-half acre will furnish sufficient fresh vegetables for the average family's use during the summer and also a surplus to store or can. The economy of home-gardening and canning of these vegetables is not fully appreciated. If the produce were purchased as required on the open market, the cost would be from \$100 to \$200, and if purchased as canned goods the cost would be considerably more.

Food is going to be scarce this winter. The woman who can find time to preserve food which would otherwise be wasted, and who will sell or give away the surplus above what is required for her own family, will be doing a real patriotic work. Canned fruits, jams and jellies are needed for soldiers in the hospitals and in the trenches. Through the income derived from selling canned products at home markets many women would find a practical way of raising Red Cross funds.

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### WHY CANNED FRUITS AND VEGETABLES SPOIL.

The two common agents that make fruit spoil are molds and yeasts, two forms of bacteria present in the air, which must be killed by heat in the cooking of the fruit, and from which the fruit after cooking must be protected by having the jars sealed or made air-tight. If a mold spore present in the fruit or jars has not been killed by heat, it will set up a growth of mold spoiling the flavor of the fruit. If a yeast plant remains unkilld by heat, it will produce other yeast plants which, in the process of growth, give off a gas and cause the fruit to ferment.

Occasionally mold appears on the top of fruit in a jar which is tightly sealed, and the housekeeper wonders how it ever got in. The mold didn't get in after the

jar was sealed; it was in the jar all the time. It may be that the fruit was over-ripe, and mold plants had time to grow on it and ripen their spores; in the spore stage, these mold plants are not killed by ordinary cooking. It may be that jars had been used which had not been thoroughly cleaned when they were emptied of their former contents, or which had contained moldy fruit and had not been thoroughly washed and sterilised, and therefore contained numbers of resting spores. See that the jars are perfectly clean and thoroughly scalded with boiling water; a good method is to wash the jars and fill them with cold water, then set them on a rack or thickly folded towels in the wash boiler, surround with cold water, let the water come to a boil and boil five minutes.

See that the rubbers and glass tops are sound, without grooves or nicks, and let them stand in scalding water for a few minutes.

Another important point is to use only sound fruit or vegetables. It is false economy to put up over-ripe food which is very likely to ferment. Fruit may be canned without sugar, and it will keep just as well. A thick sugar syrup acts as an antiseptic and will preserve even raw fruit without any cooking, but sugar in the quantity used in ordinary canning takes no part in keeping the fruit from spoiling.

Canning compounds and other preservatives used to prevent fermentation in canned fruits and vegetables are all more or less injurious to the human system. Even the least objectionable of these, if it will prevent the fermentation of canned goods, will also prevent the action of the digestive juices in the stomach, which are simply other ferments.

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## METHODS OF CANNING.

### 1. *By cooking in hot water bath.*

- (1) For home canning, a wash-boiler can be made to take the place of the more elaborate commercial outfit. Prepare the fruit, and syrup, or if vegetables are to be canned, have boiling water and salt ready to fill the cans.
- (2) Pack fruit into sterilized jars, fill with syrup, then put covers on loosely, and place on wooden rack in the boiler.
- (3) Pour warm water into the boiler, to come nearly to the top of the jars. Place the filled jars on the rack, far enough apart to not touch one another, and pack the spaces between with cotton to prevent the jars striking when the water boils.
- (4) Cover and cook until the fruit is cooked through. Ten minutes after the water boils will do for berries and some of the small fruits.
- (5) Remove cover from boiler to let steam escape, remove one jar at a time, fill to overflowing with boiling syrup and seal. The object of adding more syrup is simply to fill up the space after the fruit has settled down in cooking. (It is not necessary for the keeping of the fruit to add liquid to fill the jars after sterilizing. The air will have been exhausted in the cooking, and the glass tops will be sealed air-tight automatically.)
- (6) Set aside where there is no draught, and screw on tops as they cool and contract.

### 2. *Cooking or Stewing in a Preserving Kettle.*

- (1) Put fruit into a syrup and cook slowly until the fruit is cooked through. Fill sterilized jars to overflowing and seal.



(2) Jams or preserves are cooked by this method. (See recipes in this Bulletin.)

### 3. Fruit Cooked in the Oven.

- (1) Make syrup and prepare fruit.
- (2) Sterilize jars and set in a pan containing two inches of boiling water in the oven.
- (3) Fill jars with fruit, pour in syrup to cover, put on the tops without screwing down and cook about ten minutes.
- (4) Remove jars from the oven, fill with boiling syrup and seal.

### 4. "Raw Canning" of Small Fruits.

Small fruits like raspberries, strawberries, or sliced peaches can be sterilized so as to retain their shape and color and natural flavor without actual cooking.

Pack fruit into sterilized jars. Make a syrup and while it is boiling, pour it over the fruit and seal tightly. Put the jars in a kettle or washtub, fill the vessel to the tops of the jars with boiling water, cover over with a blanket, and as the water cools tighten down the tops. Turn upside down to be sure they are air-tight.

### 5. Cold-Pack Method of Canning Vegetables.

The cold-pack method of canning does not mean that the canning is done without heat; it simply means that the final sterilization is done after the jar or



Wash boiler with wire rack for holding jars.

Small hot water bath outfit for sterilizing one jar at a time.

can has been completely filled. The vegetables are blanched in boiling water or live steam, then quickly dipped into cold water, the skins removed and the vegetables cut into sizes for jars or cans. They are then packed into jars or cans, hot water and salt are added, and the sterilizing is done in a hot water bath or steam-pressure cooker.

### SCALDING, BLANCHING, AND DIPPING.

*Scalding*—The important reasons for scalding fruits and vegetables are:—

- (1) To loosen the skins.
- (2) To eliminate objectionable acids and acrid flavors.
- (3) To start the flow of the coloring matter which is later arrested or coagulated by the cold dip.

*Blanching*—The reasons for blanching are:—

- (1) To eliminate objectionable acids and acrid flavors.
- (2) To reduce the bulk of vegetable greens.

- (3) To make it unnecessary to use the intermittent process of sterilization (or boiling on three successive days to insure the killing of bacteria spores).

*Cold Dipping*—Three reasons for using the cold dip in canning are:—

- (1) To harden the pulp under the skin and permit removing the skin without injuring the pulp.
- (2) To coagulate the coloring matter.
- (3) To make it easier to handle the vegetables in packing.

## GENERAL RULES AND RECIPES FOR CANNING FRUITS.

*Proportions of Sugar and Water for Syrups:*—

For strawberries and cherries, 2 cups of sugar to 1 cup of water.

For peaches and plums, 2 cups of sugar to 1½ cups water.

For pears, peaches, sweet plums, sweet cherries, raspberries, blueberries and blackberries, 2 cups sugar to 4 cups water.

*To Can Soft Fruits, such as Strawberries, Blackberries, Dewberries, Blueberries, Sweet Cherries, Grapes, Peaches, Apricots, Plums:*—

Can the same day fruit is picked, if possible. Wash the fruit by pouring cold water over it through a strainer. Pack immediately in jars or cans. Add boiling hot syrup. Place rubber and top in place and partially tighten. Sterilize in hot water bath twenty minutes. Remove and tighten covers. Invert to cool and test joints. Wrap glass jars in paper to prevent bleaching; then store.

*Sour Berry Fruits, such as Currants, Gooseberries, Cranberries, and Sour Cherries:*

Can fruit same day as picked. Blanch in hot water one minute. Remove and dip quickly in cold water. Pack berries closely in container. Add hot syrup. Place rubber and cap in place. Seal partially, not tight. Sterilize sixteen minutes in hot water bath. Remove jars. Tighten covers and invert to cool and test joints. Wrap in paper and store.

*Hard Fruits, such as Apples, Pears, Quinces:*—

Blanch one and a half minutes and plunge quickly in cold water. Core, pit and remove skins if necessary. Pack whole, quartered or sliced as desired. Add boiling syrup. Place rubbers and tops in position and partially tighten. Sterilize in hot-water bath twenty minutes or until fruit is soft. Remove jars. Tighten covers. Invert to test joints. Wrap glass jars with paper to prevent bleaching and store.

*Rhubarb:*—

Wash the stalks clean. Cut them into pieces three-fourths of an inch in length. (Do not remove the skin.) Blanch two minutes. Cold dip. Pack in jars. Pour on a thick syrup, using three pounds sugar to one quart water. Put the rubber and cap in position, not tight. Sterilize twenty minutes in hot water bath.

*Raw Canning of Rhubarb and Green Gooseberries:*—

Cut rhubarb when it is young and tender. Wash thoroughly; cut into pieces about two inches long. Pack in sterilized jars. Fill the jars to overflowing with cold water, and let them stand ten minutes. Drain off the water and fill again to overflowing with fresh cold water. Seal with sterilized covers. When required

for use treat the same as fresh rhubarb. Green gooseberries may be preserved in the same way. (Although rhubarb canned in this way may keep satisfactorily, the flavor is not generally as good as when the rhubarb is sterilized and canned.)

#### *Sugarless Canning.*

The cost of sugar required to take care of the large quantities of fruit in the canning season need not prevent the preservation of the entire fruit supply available, when we know that fruit canned without sugar will keep just as well as when sugar is used. There might be some objection to this method with the large, thick-fleshed fruits, on the ground that unless sugar is added while cooking, the sweetness cannot penetrate the fruit. This objection would not hold with berries and the smaller fruits, and a minute or two of cooking with sugar when the fruit is opened for use, gives very good results even with the larger fruit.

### FRUIT JAMS AND RELISHES.

In selecting berries or other fruits for jam, the ripe broken ones will give fine color and flavor, but at the same time there should always be about one-half the quantity which are slightly under-ripe. These contain the pectin which gives a jelly-like consistency to the product. Cooking in small quantities also helps to retain color and flavor as the fruit is cooked more quickly. Rapid cooking with constant care to prevent scorching is essential.

In common practice, equal weights of fruit and sugar are used. It has been found, however, that a better consistency and a more delicate and characteristic flavor is produced when less sugar is used. Three-fourths as much sugar by weight, as fruit, has been found sufficient to keep the fruit, when it is cooked to the proper concentration. The sugar acts as an antiseptic so that the fruit will keep without being sealed air-tight.

In stirring jam use a wooden spoon or paddle, moving it across the centre of the vessel first one way and then the opposite and next around the pan, gently moving the mixture from the bottom of the pan, being careful not to stir rapidly or beat. To test when the jam is cooked to the right consistency, cool a little in a spoon and allow it to drop. If it will not pour, but falls in a sheet or flake-like jelly, it is done. An easier way is to use a candy thermometer and cook the jam until it registers 220 degrees F.

#### RASPBERRY OR STRAWBERRY JAM.

4 pounds raspberries or strawberries.      2½ pounds sugar.

Mash berries; add sugar; cook thirty minutes or until the desired consistency is obtained, stirring very often. Pour into glasses or jars and cover.

#### BLACK, RED OR WHITE CURRANT JAM.

4 pounds currants.      4 pounds sugar.

Stem currants, crush slightly; add sugar, let stand over night. In the morning cook one half hour, stirring often. Turn into glasses and cover.

## GREEN OR RIPE GRAPE JAM.

Wash and stem grapes. Separate skins from pulp. Cook skins until tender and press through a sieve. Cook pulps ten minutes and press through a sieve. Combine the two. Add one pound of sugar to every quart of fruit. Boil one-half hour, stirring often. Pour into glasses and cover.

## PEACH MARMALADE No. 1.

4 pounds peaches. Juice 2 lemons.  
2 pounds sugar.

Wipe and cut peaches in halves, remove stones, cut peaches in pieces; add sugar and cook slowly two hours; add lemon juice. Pour into glasses and cover. Quince, apricot, plum and prune marmalade may be made in the same way.

## PEACH MARMALADE No. 2.

5 pounds peaches cut into small pieces. 1 teaspoon whole cloves.  
2 pounds sugar. 2 teaspoons cinnamon bark.  
1 dozen whole allspice. 2 teaspoons sprig mace.  
A few cracked peach pits. 1 cup peach juice.  
2 inches ginger root. (Tie spices in cheese-cloth bags.)

Cook all together until as thick as marmalade and clear, or until the mixture registers 220 degrees F. when tested with a candy thermometer. Pack hot in hot jars and seal at once.

## GINGER PEARS.

Use pears not quite ripe; peel, core, and cut into thin slices. To 8 pounds of pears allow 8 pounds of sugar, 1 cup of water, juice of 4 lemons. Cut the lemon rinds into thin strips and add them. Also add one-eighth pound of ginger root cut into pieces. Simmer until thick as marmalade. Pack.

## APPLE GINGER.

4 pounds sour apples. 2 pounds sugar.  
4 lemons. 1 ounce ginger root.

Pare, core, and slice apples; wash, remove seeds, and slice lemons; add sugar and ginger root, and cook very slowly six hours. Pour into glasses and cover.

## APPLE BUTTER.

One bushel apples, eight quarts cider; cover and boil until tender. Rub the pulp through a strainer and cook thirty minutes longer, then measure. For each gallon add eight cupfuls sugar, eight teaspoons ground cloves, eight teaspoons ground cinnamon. Stir and boil twenty minutes longer; fill into jars and seal with paraffin.

## APPLE BUTTER WITHOUT SUGAR.

One bushel sweet apples, eight quarts cider. Cook until tender, put through a strainer, and cook until thick. Add 9 teaspoons ground cloves and 9 teaspoons cinnamon. Give three to four hours slow boiling, fill into jars and seal with paraffine.

**CIDER APPLE SAUCE.**

Reduce four quarts of new cider to two, by boiling. Add enough pared, cored and quartered apples to fill a good-sized kettle. Cook slowly for four hours.

**APPLE BUTTER WITHOUT CIDER.**

Pare and core the apples. Boil in water until fruit is soft. Mash to a fine pulp. To each 25 pounds of apples add 2 ounces cinnamon, 1 ounce ground cloves, 1 ounce nutmeg, 6 pounds sugar. Cook until thoroughly mixed and thickened.

**SPICED GRAPES.**

1 peck grapes.	1 teaspoon cloves.
3 pounds sugar.	1 teaspoon cinnamon.
1 pint vinegar.	1 teaspoon allspice.

Pulp the grapes; boil for five minutes; strain to take out the seeds; put the skins and pulp together; add the other ingredients and cook until thick.

**SPICED CURRANTS.**

4 pounds currants.	2 tablespoons cloves.
2 pounds brown sugar.	1 teaspoon salt.
2 tablespoons cinnamon.	1 cup vinegar.

Remove stems and wash currants. Add remaining ingredients and boil twenty minutes. Keep in stone jar or glasses.

**SPICED PEACHES.**

4 pounds peaches.	1 tablespoon cinnamon.
3 pounds brown sugar.	1 teaspoon ginger.
1 cup vinegar.	1 teaspoon salt.
1 tablespoon cloves.	$\frac{1}{8}$ teaspoon cayenne pepper.

Boil sugar and vinegar. Scald peaches. Remove skins, and cook in syrup. Tie spices in bag and cook with peaches. When peaches are tender, pour into stone jars; re-heat syrup every day for a week, pouring, when boiling, over the peaches.

**SPICED GOOSEBERRIES.**

4 pints gooseberries.	1 teaspoon salt.
3 pounds brown sugar.	$\frac{1}{8}$ teaspoon cayenne.
1 cup vinegar.	1 tablespoon lemon juice.
1 teaspoon whole cloves.	$\frac{1}{2}$ ounce ginger root.
Few sticks cinnamon.	

Tie spices in a bag. Cook vinegar and sugar five minutes. Add spice and remaining ingredients and cook slowly one hour.

**SUN PRESERVED STRAWBERRIES.**

Select ripe, firm strawberries. Pick and preserve them the same day. Hull and rinse them, and place a single layer on shallow platters. Pour over them a syrup made of six cups of sugar to one cup of water. Cover with a glass dish or pane of window glass and set in the sun eight hours. Pack in glasses, cover with paraffine or paper and keep in a cool, dry place.

## PRESERVING.

Preserving fruit is cooking it with from three-fourths to its whole weight of sugar, without breaking it up like jam. The object is to have the fruit permeated with syrup. Care must be taken to do this gradually so as to prevent the shrinking and toughening which results when fruit is placed at once in very dense syrup. It is also important not to pack the finished preserves in syrup heavy enough to crystallize later.

## PRESERVED RASPBERRIES OR BLACKBERRIES.

4 pounds berries. 3 pounds sugar.

Sort over berries and wash. Cover with sugar and let stand two hours. Simmer until boiling point is reached; boil one minute; cool; bring to boiling point again and boil one minute. Fill into jars and seal. Strawberries, thimbleberries, and gooseberries may be preserved in the same way.

## PRESERVED STRAWBERRIES.

4 pounds strawberries. 3 pounds granulated sugar.

Cover berries with the sugar and let stand over night in a cool place. Drain off the juice, pour it into a granite sauce pan, and let it boil fifteen minutes, removing the scum. Add the berries, boil three minutes, pour into hot jars and seal immediately.

## PRESERVED CHERRIES.

4 pounds cherries. 4 pounds sugar.

Wash cherries, remove stems and stones. Cover cherries with the sugar and let stand two hours. Set on stove and bring slowly to boiling point. Cook until cherries are tender. Fill hot jars and seal.

Currants and huckleberries may be preserved in the same way.

## PRESERVED CRAB APPLES.

4 pounds crab apples. 4 cups water.  
4 pounds sugar. Juice of 4 lemons (optional).

Let the water and sugar come to a boil. Add the crab apples either whole or quartered and cored. Cook until apples are tender. Add lemon juice if desired, fill into hot jars and seal.

## PRESERVED CITRON.

4 pounds citron. 4 lemons, juice and rind.  
4 pounds sugar. Small piece of ginger root.  
4 cups water.

Wash citron, cut in halves, remove seeds; cut each half into eighths, sprinkle with salt and cover with water; let stand over night then drain. Cover with clear water, let stand four or five hours and drain. Remove skin, cut in cubes and cook until transparent in syrup to which ginger and lemon have been added. Fill into hot jars and seal.

**PRESERVED PEACHES.**

4 pounds peaches.

3 pounds sugar.

Pare peaches, cut in halves and take out stones. Arrange peaches and sugar in layers in preserving kettle; let stand overnight. In the morning simmer until peaches are tender. Fill jars with fruit. Boil syrup five minutes, fill jars with syrup and seal.

**PRESERVED PEARS.**

4 pounds pears.

2 cups water.

4 pounds sugar.

Wash, pare, core, and cut pears in quarters. Put into cold water to prevent discoloring. Make a syrup of the sugar and water. Cook only enough pears to fill a jar at a time. When tender fill jars with fruit, add syrup and seal.

Apricots are preserved in the same way.

Very hard pears may be simmered in water until tender before putting into syrup.

**PRESERVED PLUMS.**

4 pounds damsons, greengages or  
blue plums.

4 pounds sugar.

Pick over plums and prick the skins so they will not burst in cooking. Arrange alternate layers of plums and sugar in a granite dish and let stand over night. In the morning drain off syrup, boil and skim. Add plums and cook until tender. Fill into hot jars and seal.

**PRESERVED QUINCES.**

4 pounds quinces.

Boiling water.

4 pounds sugar.

Wash, pare, core and cut quinces in quarters. Put in preserving kettle, cover with boiling water and simmer until tender. Cool on platters. Mix sugar with one pint of water in which quinces have been cooked. Boil ten minutes. Add quinces a few at a time, cover kettle, and cook slowly until quinces are of a rich red color. Fill into hot jars and seal.

**JELLY MAKING.**

In order to make good jelly a fruit juice must contain two ingredients, acid and pectin. The pectin is generally known as the substance in fruits which makes jelly "jell"; it is found in the largest quantities in the cores and hard parts of the fruit, and is changed as the fruit ripens into a substance which has very little of the jellying property. It is, therefore, important to use some slightly underripe fruit, and to include cores, seeds and hard parts in the first boiling to extract the juice. To test fruit juice for pectin, to a small quantity of the cold juice add an equal measure of ordinary alcohol. If pectin is present a gelatinous mass will form. If there is no pectin, the solution should remain clear.

The changing of the juice from a liquid to a jelly, is brought about by the combined effect of sugar, acid and boiling upon the pectin of the fruit juice. Some fruits contain sufficient pectin, but are deficient in acid, such as peaches, quinces, pears and sweet apples. A fruit that jells with difficulty may be combined with one that jells readily; apples, though possessing little flavor, except a few varieties, have all the necessary jelling qualities. When any desired flavor is added, good jelly results. Fruits suitable for jelly-making are: Currants, ripe and partially ripe grapes, crabapples, sour apples, and plums. Raspberries may be used, though they jell less readily.

It is, of course, possible to supply the deficiency of either acid or pectin. In oranges and lemons, the white material between the pulp and yellow rind is very rich in pectin. This may be extracted by grinding or chopping fine the thick white part, soaking in cold water twelve to twenty-four hours, and then simmering an hour. Care should be taken to remove all the yellow portion before grinding. Equally good results may be obtained, however, by adding a generous supply of apple-cores and skins to the fruit before boiling to extract the juice. A deficiency of acid may be likewise overcome by adding some acid fruit. Rhubarb juice added to any fruit juice will bring out the flavor and add "snap" to the jelly. Tartaric or citric acid, which are perfectly safe fruit products, may be obtained in crystalline form. One level teaspoon to a quart of juice is usually sufficient; however, this depends on the acidity of the fruit. To test, stir the juice until all acid crystals are dissolved, then taste. It should be about as acid as good tart apples.

#### EXTRACTING THE JUICE.

Heating is necessary to extract the pectin from the fruit. The amount of water depends on the juiciness of the fruit. The smallest possible amount of water should be used. After the fruit is thoroughly heated with the water, it should be crushed and cooked until all juice is extracted. It can then be strained through moistened double cheesecloth or flannel bags. As all of the juice is not extracted by the first cooking, a second and third extraction may be made by adding water to the pulp and further cooking.

#### AMOUNT OF SUGAR.

The theory (which has been disproved) that sugar caused the juice to jell led many people to use too much sugar. Directions usually called for equal quantities of sugar and juice irrespective of the kind of juice. The amount of sugar should be based upon the amount of pectin in the juice. A large proportion of sugar may be used with those fruits which contain a large amount of pectin, and for those in which only a small amount of water is used to extract the juice. In such cases, the use of too small a quantity of sugar results in a tough jelly. When water has been used in extracting the juice, or when the pectin content is not especially high, as in some berries, the proportion of three-fourths as much sugar as juice gives good results.

If the proportion of sugar is correct, it will show in the character of the resulting jelly. Tough jelly indicates too little sugar, and a soft, sticky jelly (providing both pectin and acid are present) indicates too large a proportion of sugar. Imperfect jelly, due to a wrong proportion of sugar or juice, may be corrected by cooking a second time, adding more juice or more sugar as the case may require. Care should be taken to get the correct proportion in the first place, however, as cooking the pectin too long in the presence of acid may destroy its jelling properties.



### TIME OF COOKING.

A definite concentration of juice and sugar is necessary before jelly will be formed. The cooking time necessary for such concentration ranges from eight to thirty minutes. The larger the proportion of sugar to juice, the sooner such concentration is reached. The most accurate test is to take the temperature with a candy thermometer in the boiling liquid. When it registers 217 degrees F. the jelly is done. Be careful not to let the bulb of the thermometer touch the bottom of the kettle, or the temperature taken will be that of the metal, not of the juice. Another good test is to cool a little in a spoon. If it will not pour, but falls in a sheet, the proper consistency has been reached.

### PROCESS OF MAKING JELLY.

Wash and cut fruit into pieces, using all the skins and cores. Put into a granite or porcelain-lined kettle, add a very small amount of water, and cook slowly until juice is well drawn out. With very juicy fruits like grapes and currants, mash the fruit at the beginning and do not add any water. Crush fruit and strain through double thickness of cheesecloth or flannel jelly-bag. Add more water to the pulp, boil and strain again. The juice from the second boiling is apt to lack flavor. A juice may be added which, although possessing good flavor, will not jell, such as peach, cherry or strawberry. Boil the strained juice for twenty minutes, and add from three-fourths to an equal quantity of heated sugar. The advantage of using sugar which has been heated in the oven is that when cold sugar is added the boiling is temporarily stopped, thus increasing the cooking time, and the longer cooking period gives a darker colored jelly. Cook until it will jell. Skim and turn into sterilized glasses.

#### *To Prepare Glasses for Jelly.*

Wash glasses and put in a kettle of cold water; place on range and heat water gradually to boiling point. Remove glasses and drain. While filling glasses place them on a cloth wrung out of hot water.

#### *To Heat Sugar for Jelly.*

Put sugar in a granite dish, place in the oven, leaving the door open, and stir occasionally. A brown paper folded in the pan before the sugar is put in helps to prevent its melting or burning.

#### *To Cover Jelly Glasses.*

Jelly should be closely covered to protect from molds and dust as well as to prevent drying out or the absorption of moisture. Brush with alcohol or brandy and cover with melted paraffine just warm enough to pour, or cover with rounds of paper dipped in brandy. Put on tin covers or paste paper securely over the top.

#### *Combination of Fruits for Jelly-making.*

The process of jelly-making does not vary; all kinds can be made in the same way. Numberless varieties may be made by blending flavors. Raspberries and currants, quinces and apples, elderberries and green grapes, and other combinations can be made up from supplies of fruit at hand, provided always the necessary pectin and acid are supplied by some fruit in the combination.

## THE CANNING OF VEGETABLES.

### EQUIPMENT FOR HOME CANNING.

When taking up the work on a small scale, it is quite possible to do successful home canning by using only such equipment as the farm and home may easily provide. A wash-boiler or other vessel with a close-fitting top can be easily transformed into a home canner by fitting with a rack for the bottom, with wire or wooden handles. These home-made outfits are classified in canning equipment as "hot water bath" outfits. A thermometer to test the concentration of jams and jellies, paring and coring knives, wiping cloths, a convenient table for work, plenty of fresh clean water near at hand, a watch or clock in a convenient place for use in checking the time according to schedule—these complete the equipment necessary for canning in glass jars. If you are using tin or aluminum cans, you will need soldering flux, lead, sal ammoniac, a soft brick, capping iron and tipping steel.



Small steam-pressure outfit for home canning.

For convenience in following recipes, and for those who are interested in canning on a larger scale, the following brief description of the three types of canning outfits will be of interest.

#### *Hot Water Bath Canning Outfit.*

These are manufactured commercially, but may be adapted from a new wash-boiler with a frame for holding the jars. A deep pail, a kettle, or any other container which is at least six inches deeper than a quart jar, and which has a close-fitting cover, makes an excellent home canner when equipped with some means of preventing the jars from resting directly on the bottom. Wire frames with bail handles can be obtained. After placing the jars in the canner, surround them with warm water, reaching to within one inch from the tops of the jars. Do not have the water hot enough to break the jars.

#### *Water Seal Canning Outfit.—*

This outfit looks like a large pail. It is fitted with a thermometer, a safety valve and a pet-cock, and is so constructed that steam is confined under pressure.

This raises the temperature in the canner above the boiling point, and reduces somewhat the length of time required to sterilize the contents of the jars.

#### *Steam Pressure Outfits.—*

This is similar in appearance to the water-seal outfit, but is much heavier to move about. Since it is stronger and heavier, more pressure is secured and the time of sterilization is cut down still further. Such outfits are extremely useful when vegetables are to be canned in large quantities. Directions which may be safely followed are sent out with all pressure-canner outfits.

### CANNING IN TIN CANS.

The directions given in this bulletin refer more particularly to canning in glass jars, but with the following directions for capping and tipping, any of the recipes may be applied to canning in tin cans. Where new containers must be purchased, the tin cans are, of course, considerably cheaper than glass.

#### *Capping.—*

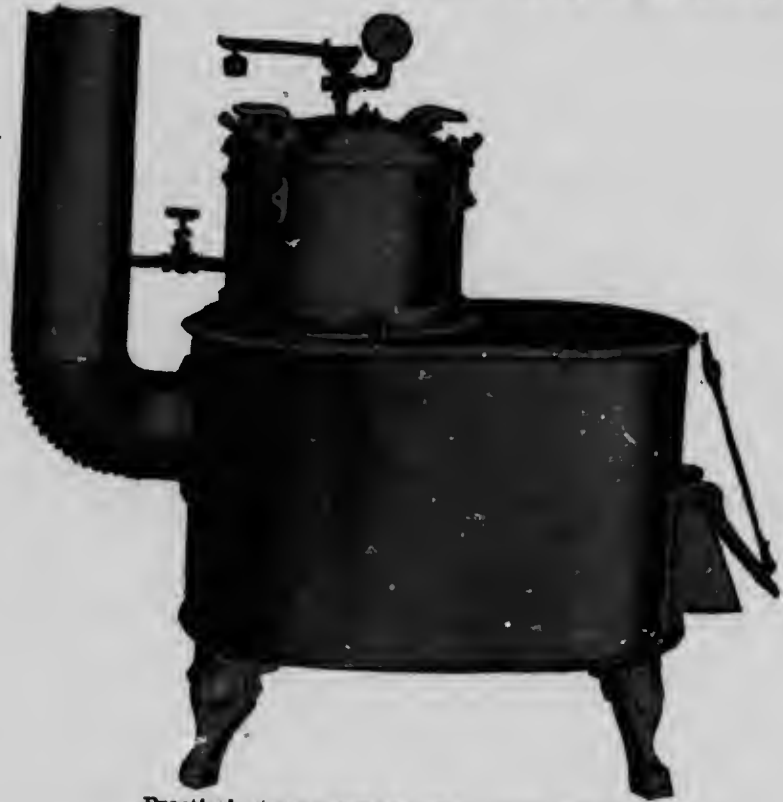
The most difficult and particular part of the work is the soldering on of the caps after the cans have been filled. This can be done in the fire box under the processing vat. It is, however, convenient to have a separate fire pot. A very cheap one can be made from half a length of stove pipe, cutting a hole two inches in diameter a couple of inches from one end of the pipe to put the iron through. Stand this end on a couple of bricks and build a fire within the pipe. Coal, charcoal or chips can be used as fuel. It is very important that the capping iron (as well as the tipping iron which is used later) should be well tinned and kept in a bright condition. Should the tinning wear or burn off the irons it is necessary to retin them. To do this, first smooth and brighten them by filing or using emery paper, after this heat them rather hot. Then dip them into soldering fluid or flux. Next rub them with sal ammoniac and stick solder. Continue this until the irons take on a smooth coating of tin. A very convenient plan for retinning the capping iron is to fill a No. 3 can a couple of inches deep with one part scrape solder or two parts sal ammoniac. After your iron has been heated and dipped in flux, revolve it in the above mixture until it is well tinned. Now dip it into the soldering fluid again and wipe off all adhering loose particles with a damp cloth. A low box or stool is most convenient to cap and tip on, having it placed between the fire pot and the processing vat. Have the tops of your cans wiped clean, especially in the grooves where the soldering has to be done. Place the cap on, holding it down with your left hand. Dampen the groove with a weak flux or soldering fluid applied with a small brush, being careful not to let any of the flux enter the cans. (The flux is acid and if more than necessary is used it will act upon the tin and cause oxide flakes to be formed. This is often found in factory goods, where a strong flux has been recklessly used or where a poor quality of tin has been used in the making of the cans.) Wipe your capping iron with a cloth moistened in flux. Hold the iron in your right hand and with a stick of solder in your left press the steel until sufficient solder has melted. Now revolve the iron several times or turn it from right to left until the solder is properly spread around the cap. Now press down on the central rod raise the iron and hold it a few seconds until the solder sets. It is a good plan to have a helper at this point to hold down the cap with a piece of stock so as not to detain the operator while his iron is hot. You cannot do a good job when your irons fail to melt the solder rapidly. When the iron becomes too cool to work with, dip it into a weak flux and place it in the fire to reheat. A separate tin of flux should be kept for this purpose as it soon becomes quite dirty.

*Exhausting.—*

The caps having been soldered on the cans are immersed three-quarters of their depth in a vat of boiling water. This expands the goods and causes the air to be forced out through the little vent left open in the centre of the cap. This process is called exhaustion. It prevents the cans from bursting during the processing or cooking.

*Tipping.—*

After most of the air is driven out, the cans are removed from the vat and "tipped." That is the little vent is soldered up. The same precautions have to be taken here as in the case of the capping. The top of the cap should be wiped clean and a little flux applied around the vent. Place the point of the hot iron in the vent; touch the iron with a bar of solder, melting off just sufficient to seal



Practical steam-pressure outfit, with fire-box.

over the hole; twisting the iron slightly as you lift it from the hole. A common pointed soldering iron should be used for this part.

*Processing, or Sterilizing.—*

The cans are now ready to be processed. This is the term applied to the sterilizing or cooking of the foods contained in the sealed cans. The processing should be done as soon as possible after they have been exhausted and tipped. Processing is the most critical point in the process of canning. Have a clock or watch hanging conveniently and a slate or tablet upon which to record the time. Lower the crate containing the cans into boiling water; watch here for bubbles which will indicate "leaks." Remove any such cans and repair by opening the vent with a hot

iron. Mend the leak and retip. Observe the time the goods are put into the boiling water, add to this the time they have to be processed and you will have the time the goods have to come out. *N.B.* Have the water boiling before you count the time. It is not safe to leave the timing to memory, as the best of men are apt to make mistakes.

After the cans have been processed they should be put into cold water for a few minutes. This is to form the contents, which will add to the quality of the goods.

## RULES AND RECIPES FOR CANNING VEGETABLES.

### METHODS OF STERILIZATION.

#### *One-Day Method.*—

By the one-day method of sterilizing we mean placing the jars in the canner and heating them continuously at the boiling point or above it, for several hours, usually if this heating is continued long enough the vegetables will keep.

#### *Intermittent or Three-Day Method.*—

The jar is taken out of the canner at the end of an hour's boiling. The clamp or rim is tightened and the jar is set aside to cool until the following day. Do not let the vegetables cool off in the canner as this results in over-cooking. On the second day, the clamp is loosened or the rim unscrewed, the jars are placed in warm water deep enough to reach within an inch of the tops, and they are left until they have been boiled an hour, at the end of which time they are again removed. On the third day the hour's boiling is repeated in the same way.

There is reason for believing that the three-day method is advisable when peas, beans, corn and greens are canned. Sometimes certain organisms on these vegetables go into a restive or spore form in which they are not easily killed by boiling. If, for example, there are spores in a jar of peas, they will probably not be killed by one hour or even by three hours of sterilizing. So after an hour's cooking, we set the jar aside until the next day, and as it gradually cools, conditions become just right for these spores to germinate. Most of them quickly change to an active or vegetative form in which it is possible to kill them by boiling. The second day, these vegetative forms are killed. It is barely possible, however, that some of the spores may not have reached the vegetative stage during the first cooling, and so have not been killed by the second boiling. For this reason we take the added precaution of sterilizing the third day. A longer cooking period for a single day is less trouble and perhaps it requires less fuel than the three-day method, but the intermittent method is absolutely safe. It is for the housekeeper to decide which method she wishes to use and then to follow explicitly the directions for that method.

NOTE.—(1) The terms "blanching," "cold-dipping," "cold pack," used in the following recipes have already been explained in the section "Why Fruits and Vegetables Spoil" in this bulletin.

(2) The length of time allowed for sterilization in these recipes is required for cans not larger than two-quart size. Gallon cans require a longer period.

#### VEGETABLE GREENS—SPANISH, BEET-TOPS, ASPARAGUS, SWISS CHARD, ETC.

Prepare and can the same day picked. Sort and clean. Blanch in a steamer for 15 or 20 minutes. Remove, Plunge quickly into cold water. Cut in pieces convenient for canning. Pack tightly in jars or cans. Add boiling water to fill

crevices, and a teaspoonful of salt to each quart. If using glass jars, place rubber and tops in position, partially seal; (if using tin cans, tip and seal completely). Use the intermittent process of sterilization, or,

Sterilize 90 minutes in hot water bath outfit.

Sterilize 60 minutes in hot water seal.

Sterilize 50 minutes in steam pressure outfit under five pounds of steam.

Remove from canner. Tighten the covers. Invert to cool and test joints. Wrap in paper to prevent bleaching and store.

#### ROOT AND TUBER VEGETABLES.—CARROTS, PARSNIPS, BEETS, SWEET POTATOES.

Wash thoroughly. Scald in boiling water sufficiently to loosen skin. Plunge quickly into cold water. Scrape or pare to remove skin. Pack into jars whole or cut in sections or cubes. Add boiling water and one level teaspoonful of salt to the quart. Place rubbers and tops in position. Partially seal, but not tight. (Cap and tip tin cans).

Sterilize 90 minutes in hot water bath.

Sterilize 75 minutes in water seal outfit.

Sterilize 60 minutes in steam pressure outfit under five pounds of steam.

Sterilize 35 minutes in pressure cooker under twenty pounds of steam.

Remove jars. Tighten covers. Invert to cool and test joints. Wrap jars in paper to prevent bleaching and store.

*Note:*—In canning beets, if vinegar is added to the water in the proportion of one part vinegar to four of water, the natural bright color will be preserved.

#### STRING BEANS AND PEAS.

Can same day vegetables are picked. Blanch in boiling hot water from 2 to 5 minutes. Remove and plunge quickly into cold water. Pack in jars. Add boiling water to fill crevices. Add 1 level teaspoonful salt to each quart. Place rubbers and tops in position. Partially seal, but not tight. (Cap and tip tin cans.) Use the intermittent sterilization process, or

Sterilize 120 minutes in hot water bath.

Sterilize 90 minutes in water seal outfit.

Sterilize 60 minutes in steam pressure outfit under five pounds of steam.

Sterilize 40 minutes in pressure cooker under 20 pounds of steam.

Remove jars. Tighten covers. Invert to cool and test joints. Wrap in paper to prevent bleaching and store.

#### TOMATOES

Scald in hot water enough to loosen skins. Plunge quickly in cold water. Peel and remove hard cores. Pack whole in jars. Fill jars with tomatoes only. Add 1 level teaspoonful salt to each quart. Place rubber and cap in position. Partially seal but not tight. (Cap and tip tin cans.)

Sterilize 22 minutes in hot water bath outfit.

Sterilize 18 minutes in water seal outfit.

Sterilize 15 minutes in steam pressure outfit, under five pounds steam.

Sterilize 10 minutes in pressure cooker under twenty pounds steam.

Remove jars. Tighten covers. Invert to cool and test joints. Wrap jars in paper to prevent bleaching and store.

## SWEET CORN.

Can the same day as picked. Remove husks and silk. Blanch on the cob in boiling water 15 minutes. Plunge quickly in cold water. Cut the corn from the cob. Pack solidly in jars. Add 1 level teaspoonful of salt to each quart, and sufficient hot water to fill the jars. Place rubber and top in position. (Cap and tip tin cans.) Use the intermittent process of sterilization described above, or

Sterilize 4 hours in hot water bath outfit.

Sterilize 90 minutes in water seal outfit.

Sterilize 60 minutes in steam pressure outfit under five pounds steam.

Remove jars. Tighten covers. Invert to cool and test joints. Wrap jars in paper and store.

## PUMPKIN AND SQUASH.

*Recipe for Canning Pie Filling.*

Cut up into convenient sections. Core and remove skins. Cook for 30 minutes to reduce to pulp. Pack in glass jars or tin cans. Add 3/4 of sugar and 1 teaspoonful salt to each quart of pulp. Place rubber and top in position. Partially seal but not tight.

Sterilize 60 minutes in hot water bath.

Sterilize 50 minutes in water seal outfit.

Sterilize 40 minutes in steam pressure outfit under five pounds steam.

Sterilize 30 minutes in pressure cooker under twenty pounds of steam.

Tighten covers, invert to cool, wrap in paper and store.

*Recipe for Canning, for Special Dishes (Fried, creamed, baked.)*

Cut pumpkin into small cubes. Blanch in boiling water for 10 minutes. Plunge quickly in cold water. Pack in jars. Add boiling water and 1 level teaspoonful salt to the quart. Place rubbers and caps in position.

Sterilize 60 minutes in hot water bath.

Sterilize 45 minutes in water seal outfit.

Sterilize 35 minutes in steam pressure outfit under five pounds steam.

Sterilize 25 minutes in pressure cooker under fifteen pounds of steam.

Seal as in preceding recipe.

*Note.*—Hubbard Squash is made much easier to prepare for canning if allowed to stand in scalding water for about five minutes. The skin can then be removed very easily.

*Note No. 2.*—As it takes pieces of squash some time to cook tender, it can be sterilized more quickly if first put through the food chopper, or it may be first cooked and mashed.

## CAULIFLOWER.

Separate the flowerets. Blanch 3 minutes. Plunge into cold brine (1/2 pound salt to 12 quarts water.) Let stand in brine for 12 hours. Pack in glass jars or enamelled tin cans. Fill with boiling water and add 1 level teaspoonful of salt per quart. Place rubber and cap in position. (Cap and tip tin cans).

Sterilize 45 minutes in hot water bath.

Sterilize 35 minutes in water seal outfit.

Sterilize 30 minutes in steam pressure outfit under five pounds of steam.

Sterilize 20 minutes in pressure cooker under fifteen pounds of steam.

Remove jars, tighten covers, and invert to test joints.

### MUSHROOMS.

(Do not take any risks with wild mushrooms until you are absolutely sure they are mushrooms.)

Wash and trim the mushrooms. If small can them whole; if large cut into sections. Blanch 5 minutes. Plunge into cold water. Pack in glass jars. Fill with boiling water and add 1 level teaspoonful of salt to each quart. Place the rubber and cap in position.

Sterilize 90 minutes in hot water bath outfit.

Sterilize 60 minutes in water seal outfit.

Sterilize 60 minutes in steam pressure outfit, under five pounds of steam.

Sterilize 20 minutes in pressure cooker under fifteen pounds of steam.

Remove jars. Tighten covers and invert to test joints.

### PRESERVING VEGETABLES IN BRINE.

#### STRING BEANS, CUCUMBERS, ETC.

String beans, cucumbers, etc., may be kept for winter use by packing in a brine in stone crocks. The two common methods of doing this are:—

(1) To pack the vegetables in the crock and cover with a concentrated salt solution made by stirring salt in a pail of water, and continuing to add salt until the water will not dissolve any more. Pour off the clear brine; add more water to the salt in the pail and continue until the vegetables are completely covered. Place a weight on top to keep the vegetables under the brine, cover the crock and set in a cool place.

(2) Pack like sauer-kraut. This method would not do for larger vegetables like cucumbers which could not be packed tightly. Place a layer of vegetables in a crock, sprinkle with salt as in making sauer-kraut. Pack solidly, place under a weight and keep in a cool place.

#### SAUER-KRAUT.

Cut the cabbage into shreds, do not chop. Put a layer of cabbage about three inches deep into tank or vessel having straight sides. Crockery ware, or cypress or white pine casks are good for the purpose. Sprinkle over the first layer of shredded cabbage the first grade of dairy salt. The proper proportion is  $2\frac{1}{2}$  pounds salt for each 100 pounds of cabbage. Repeat this until the cask is full and heaped up. Have a cover fitted to inside of cask. Put this over the cabbage and weight it down with rocks. In ordinary room temperature the kraut will cure in from 16 to 18 days.

#### DRIED SWEET CORN.

Sweet corn may be preserved for winter use by drying in the oven, and this is an excellent method of saving any that is left over from a meal during the green corn season. The corn must first be cooked. Cut the corn from the cob and dry in a slow oven for fifteen minutes, being careful not to let it scorch or brown at all. Remove from the oven and allow it to stand in an airy place for a few hours. Put into cotton bags and hang in a dry place. When preparing for use, soak over night like white beans, and cook the same as canned corn.



## PICKLES

In pickles the preservation is effected by the use of vinegar and spice. This means that the strength of the vinegar must be sufficient to exert a preservative action, also that there must be enough of it to cover the material pickled. There are three main classes of pickles; sweet fruit or vegetable pickles; sour pickles which include mustard pickles; and that large variety of pickles in which the material is chopped finely. Although many varied recipes may be found for each class, one formula can be used to make a great variety.

*Sweet Pickled Peaches, Pears, Sweet Apples, Crab Apples.*

- |                        |                          |
|------------------------|--------------------------|
| 1 peck prepared fruit. | 2 ounces stick cinnamon. |
| 1 quart vinegar.       | 1 ounce whole cloves.    |
| 1 cup water.           | 4 pounds sugar.          |

Boil sugar, vinegar, and spices, twenty minutes. Dip peaches in boiling water, and rub off the fur but do not peel. Pare other fruits. Stick fruit with whole cloves. Put into syrup and cook until soft, using one-half the fruit at a time.

*Sour Pickles: Onions, Cucumbers, Green Tomatoes.*

The vegetables must first be soaked in brine. Allow  $1\frac{1}{2}$  cups salt to 2 quarts boiling water. Pour over the vegetables and let stand two days. Drain and cover with more brine. Let stand two days and drain again. Take fresh brine, and heat to boiling point; put in onions and boil three minutes. Drain and cover with a spiced vinegar made as follows:

- |                         |                               |
|-------------------------|-------------------------------|
| 1 gallon vinegar.       | 2 sticks of cinnamon.         |
| 1 cup sugar (optional). | 2 tablespoons whole allspice. |
| 4 red peppers.          | 2 tablespoons mace.           |

Tie spices in a cheesecloth bag and boil in vinegar ten minutes. Pour over vegetables and bottle.

*Mustard Pickles for Mixed Vegetables: Onions, Cucumbers, Green Tomatoes.*

Prepare the vegetables for pickling by giving them the brine treatment described in the recipe for Sour Pickles. Make a dressing from the following recipe:

- |   |                      |
|---|----------------------|
| $\frac{1}{4}$ to $\frac{1}{2}$ cup sugar. | 2 tablespoons flour. |
| 1 ounce ground mustard.                   | 1 pint vinegar.      |

Mix the dry ingredients and stir into the hot vinegar. Cook until well thickened. Turmeric may be added to give color. Pour while hot over the vegetables and bottle.

## CHILI SAUCE.

- |                         |                             |
|-------------------------|-----------------------------|
| 2 quarts ripe tomatoes. | 2 teaspoons cloves.         |
| 4 large onions.         | 2 teaspoons cinnamon.       |
| 4 peppers.              | 2 teaspoons ginger.         |
| 3 tablespoons sugar.    | 1 teaspoon ground allspice. |
| 2 tablespoons salt.     | 2 teaspoons nutmeg.         |

Boil together until quite thick, then bottle for use.

## TOMATO CATSUP.

- |                                |   |
|--------------------------------|---|
| 1 gallon tomatoes.             | 1 pint vinegar.                               |
| 2 medium sized onions.         | 1 level tablespoon each whole allspice.       |
| 2 tablespoons salt.            | cloves, cinnamon and pepper.                  |
| 4 tablespoons sugar.           | 2 small red peppers sliced and seeds removed. |
| 1 tablespoon powdered mustard. |   |

Tie the whole spices in a cheesecloth bag. Cook tomatoes, put through a colander, add ground spices and spice bag and cook for  $1\frac{1}{2}$  hours, or until nearly thick enough. Add vinegar and cook until thick. Bottle and seal with paraffine, or cork tightly.

### CANNED MEATS AND SOUPS.

Meat may be canned as successfully as fruits and vegetables. Besides giving a supply of fresh meat for emergency occasions; the canning of some of the meat butchered on the farm is a right step in the way of economy. Beef which might otherwise be used more freely than is necessary, at the time of killing, can be saved for use in seasons when fresh meat is difficult to obtain.

#### CANNED FRESH BEEF No. 1.

Cut the beef into pieces of about  $\frac{3}{4}$  pounds in weight. Roast or boil slowly for one-half hour. Cut into small pieces, remove gristle, bone, and excessive fat and pack directly into glass jars. Fill with gravy from the roasting-pan, or pot liquid concentrated to one-half its volume. Add 1 teaspoonful salt for each quart of meat. Put rubber and cap in position, not tight.

Sterilize 5 hours in hot water bath.

Sterilize  $4\frac{1}{2}$  hours in water seal outfit.

Sterilize  $3\frac{1}{2}$  hours in steam pressure outfit at five pounds pressure.

Sterilize 2 hours in steam cooker at ten pounds pressure.

Remove jars, tighten covers, and invert to test joints.

#### CANNED BEEF No. 2.

Free the meat from the bone, and cut it in pieces of a size to go into jars easily. Pack the raw meat solidly into jars, filling the jars to within three-fourths inch from the top. Sprinkle over the meat one teaspoonful salt to each quart of meat. Add no water. Celery leaves, onion, pepper or other seasonings may be added if desired. Place rubbers and tops in position, not tight. Sterilize and seal as in Canned Beef No. 1.

#### CANNED CHICKEN No. 1.

Kill the fowl and draw at once. Wash carefully and cool; Cut into sections and boil until meat can be removed from the bones. Pack meat in glass jars, fill jars with the liquid which has been boiled down to one-half its original volume. Add a level teaspoonful of salt per quart of meat. Place rubber and cap in position, not tight.

Sterilize  $3\frac{1}{2}$  hours in hot water bath.

Sterilize 3 hours in water seal outfit.

Sterilize  $2\frac{1}{2}$  hours in steam cooker at five pounds pressure.

Sterilize 2 hours in steam cooker at ten pounds pressure.

Seal the same as other canned meats.

#### CANNED CHICKEN No. 2.

Kill the fowl and draw at once. Wash carefully and cool. Cut in convenient sections removing the bones, and pack in glass jars. Fill with boiling water. Add a level teaspoonful of salt per quart. Put rubber and cap in position and sterilize one half hour longer than time given in recipe for Canned Chicken No. 1.

**CANNED CHICKEN No. 3 (Macdonald Institute).**

Clean and draw the chickens as usual. Peel all the raw meat off the bones. Pack the bones in a pot, cover with water, add a tiny bit of whole mace, 1 clove and 2 allspice berries for each chicken, and boil gently 5 or 6 hours. Wash and scald wide-mouth fruit jars. Spread the raw chicken out, sprinkle it lightly with salt and pepper, and pack it into the jars. Lay the covers on without rings or rubbers. Steam 2 hours and set aside till next day. When the bones-stock is cooked, strain it off. The following day, remove the fat from the top, melt the jellied stock and use it to fill up the jars. Put on the rubbers and tops, and screw the rings partly down.

Steam for one hour longer and screw the rings down tightly.

**PORK SEALED IN DRIPPING.**

Pork may be canned in the same way as beef. A very easy and satisfactory way to preserve fresh frying pork for summer use is to slice and fry the meat, cooking it almost as much as you would for immediate use. Place the pieces in layers in a stone crock pouring hot fat over each layer making sure to have the top completely covered with fat. This makes a seal under which the meat will keep perfectly. Bind a cloth over the top of the jar, cover and keep in a cool place.

**CHICKEN STOCK SOUP.**

All bones and trimmings of the chicken should be covered with cold water, salted and slowly simmered until the flesh drops in shreds from the bones and the liquid is concentrated to about one-half its original volume. Remove meat and bones and strain the stock. Partially seal glass jars. (Cap and tip tin cans).

Sterilize 90 minutes in hot bath outfit.

Sterilize 75 minutes in water seal outfit.

Sterilize 60 minutes in steam cooker at five pounds pressure.

Sterilize 45 minutes in pressure cooker at ten pounds pressure.

Remove jars, tighten covers, and invert to test joints.

**CHICKEN BROTH WITH RICE.**

For each gallon of soup stock use 12 ounces of rice. Boil the rice 20 minutes. Fill the jars or tin cans two-thirds full of rice and the remainder with soup-stock. Partially seal glass jars. (Cap and tip tin cans.)

Sterilize the same as Chicken Stock.

**VEGETABLE SOUP.**

Soak  $\frac{1}{4}$  pound lima beans and 1 pound rice for 12 hours. Cook  $\frac{1}{2}$  pound pearl barley for 2 hours. Blanch 1 pound carrots, 1 pound onions, 1 medium-sized potato, and 1 red pepper for 3 minutes and cold dip. Prepare the vegetables and cut into small cubes. Mix thoroughly lima beans, rice, barley, carrots, onions, potatoes, red pepper. Fill glass jars or the enameled tin cans three-fourths full of the above mixture of vegetables and cereals. Make a smooth paste of  $\frac{1}{2}$  pound of wheat flour and blend in 5 gallons of soup stock. Boil 3 minutes and add 4 ounces salt. Pour this stock over vegetables and fill cans. Partially seal glass jars. (Cap and tip tin cans.) Sterilize the same as Chicken Soup.

**ADDITIONAL CANNING NOTES.**

1. In the case of vegetables, which do not require long or intermittent sterilization in canning, it is a good plan, when preparing them for dinner, to cook enough extra to fill a can or two. This method saves time and fuel.

2. Broken or poorly-shaped tomatoes are just as good for soup as the perfect ones. Tomatoes canned for soup may be strained to get rid of the seeds before canning.

3. To can tomatoes whole, to use for salad during the winter, select small tomatoes, scald to loosen the skins, peel and plunge into boiling water for a few minutes. Lift from the boiling water and pack in jars, adding a teaspoonful of salt for each quart of tomatoes. Add a little boiling water to fill the jars if there is not juice enough without crushing the tomatoes, and sterilize as explained under "Canning of Vegetables."

4. In making apple butter, where the recipe calls for cider, it has been found that grape juice may be substituted, and many people consider that this gives a more delicate product than where cider is used.

## PRESERVATION OF EGGS.

### PACKING IN WATER-GLASS.

Eggs should be preserved during March, April, May, and June, when the production is greatest and the price is lowest. Eggs preserved in water glass can be successfully kept for as long a time as one year. They are practically as good as fresh eggs for all cooking purposes. The commercial water-glass solution may be obtained from any drug store. Water glass in the form of a powder is now on the market. It can be dissolved in a definite quantity of water, as stated in the directions on the package, and for this reason is more reliable than the commercial solution, which varies in concentration.

#### *Directions.*

If the commercial water-glass solution is to be used, mix  $1\frac{1}{2}$  quarts with 18 quarts of pure water; water which has been boiled is preferable. Stir the mixture until the ingredients are thoroughly mixed. A stone jar is the most suitable vessel for the mixture. Two eight-gallon jars are sufficient for 30 dozen eggs, using the amount of solution prescribed. After the water glass is thoroughly mixed, pour it into the vessels to be used, being sure that the vessels are absolutely clean. Place the eggs in the water glass, see that those at the top are submerged under at least two inches of the liquid, and cover the jars in order to prevent evaporation. Put the jars in a cool place where they will be undisturbed during the year.

#### *Suggestions.*

Preserve only absolutely fresh eggs; stale eggs will not keep in any preservative. Have your preservative ready to receive the fresh eggs as you get them. If there is any doubt as to the freshness of the eggs, candle them, or see whether they sink when placed in a dish of water. If an egg sinks, it is reasonably fresh.

Do not preserve dirty eggs or eggs that have been washed. Washed eggs will not keep because the protective gelatinous coating has been removed by the washing; and dirty eggs will become tainted in flavor.

Do not use the same liquid preservative more than one year. Use spring eggs; they will keep better than summer or fall eggs. Use infertile eggs; rather than fertile eggs for preserving. Do not leave eggs in the preservative longer than one year. Rinse the eggs with water, after removing from water-glass solution.

Eggs that are in good condition when removed from water-glass solution will usually remain good for at least two weeks. If it is desired to boil eggs preserved in water glass, prick a small hole through the large end of the shell before placing them in the water. The pores of the shell have been sealed by the water-glass solution, and without the pinhole the expanding air within the shell would burst it.

### HOT-DIPPING METHOD.

Eggs may be preserved by putting a few at a time in a cheesecloth bag and lowering into boiling water for ten seconds. Remove, cool, wrap each in paper and pack away in a cool place.

### DRYING FRUITS.

The necessity of saving every pound of produce grown this year, will, no doubt, revive the practice of drying fruit on many farms. While it is difficult to give any fast rules to follow with the equipment used in the average home, where the fruit is dried mostly on racks over the stove or in the oven with a slow fire, the following methods used in kiln evaporators give some idea of the temperature and time required for drying.

In the kiln evaporator, most operators maintain a temperature of 155 to 165 degrees for the first five or six hours. If the temperature is raised higher than this the cellular structure of the fruit is destroyed, and a great deal of sugar lost by bleeding. Unless the temperature is kept up to this level, the surfaces of the fruit become slimy and further drying is retarded. By these signs, the housekeeper can regulate the temperature even where her equipment does not permit the use of a thermometer. After the first five or six hours some operators allow the temperature to go down to 130 or 135 degrees, open the ventilators widely, and continue the drying by using large volumes of air at lower temperature for ten to twelve hours, after which the temperature is brought up to 175-180 degrees, and kept there until the drying is completed. Those who use this method claim that it is economical of fuel, and that it makes a more springy, "lively" product.

In drying prunes, and berries, cherries, currants, etc., the temperature at the outset should not be allowed to rise above 125 or 130 degrees until the fruits have lost a considerable part of their water, as otherwise there will be expansion and bursting with consequent dripping. If ample air can be obtained, or if a good draught can be had through the kitchen where the fruit is being dried, a higher temperature, from 185 to 180 degrees may be employed in the last half of the drying period. If there is not a free circulation of air, however, the temperature must be kept below this point or the fruit will be partially cooked or dried outside while the inside is still moist.

#### *To Determine When Apples are Sufficiently Dried.*

Apples should be removed from the drying trays while they still contain slightly more moisture than the finished product is to have. One can learn only by experience how to judge accurately when the fruit is ready to remove, but some general tests may be used. If the fruit is sufficiently dry to take from the dryer, it will be impossible to press water out of the freshly-cut ends of the pieces, but they will be sufficiently elastic not to break when the piece is rolled into a cylinder. When a mass of slices are pressed firmly into a ball in the hand, they should separate at once when released. When the fruit has reached this condition it should be spread out on the floor or on a table in a dry room, to a depth of a foot or more, and stirred thoroughly once a day.

Some idea as to whether apples have been sufficiently dried may be gained by weighing them before and after drying. An average yield of dry fruit from Baldwin, Spitzenburg, or Ben Davis will be 13 to 13½ pounds from 100 pounds of fresh fruit. Jonathan and Greenings will yield from 13½ to 14 pounds per hundred of fresh fruit, while varieties like Russet and Grimes Golden will give

from 14½ to 16 pounds. Windfalls and immature fruits will make a slightly lighter product as they must have the water content reduced to a lower percentage in order to prevent spoiling.

#### SUN-DRIED FRUITS.

Rules which apply to such fruits as cherries, plums, peaches, quinces, apples, pears, apricots, are as follows:—

All fruits must be perfect and ripe. Cherries should be stoned before drying. Plums are wiped clean and stoned. Firm, ripe peaches are better if dried with the skins on. They must be brushed with a small vegetable brush or wiped with coarse towels, cut into halves and the stones removed. Apricots are prepared the same as peaches, but apples, pears and quinces are pared and cut into quarters and eighths, depending on the size of the fruit.

All fruits are dried in the same way: Spread them in a single layer on a board; have small posts at each corner of the board; cover it with a piece of mosquito netting, and set the board in the hot sun. When the sun is down bring the fruit indoors. Next morning turn the fruit over, and set again in the hot sun. If there should be rain or damp weather, the drying will have to be finished in a very moderate oven. If dried in the oven, care must be taken not to scorch the fruit.

The fruit must be perfectly dry before putting it into flour bags or sugar bags. When filled, tie the bags and hang them in a cold, dry place.

For sun-drying about three hot, sunny days will be required, and the fruit must be turned quite often.

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#### CURING PORK AND BEEF ON THE FARM.

While beef-rings have simplified the meat problems for the farmer's family in many localities, there is still a popular demand for home-cured pork. We are beginning to realize that the sugar-cured hams and bacon considered almost a delicacy by townspeople, may be relished just as much at home, and can be prepared so as to be not at all inferior to the article selling in stores for twenty or twenty-five cents a pound.

Pork, unlike beef and mutton, should be cut as soon as it is cooled through, and many butchers prefer to split the carcass as soon as it is dressed, to hasten cooling. The method of cutting most commonly followed is to remove the head about an inch back of the ears, taking out the shoulders between the fourth and fifth ribs and cutting off the hams about two inches in front of the pelvic bones. The bits cut off in trimming the hams to a smooth rounded shape may be used in the sausage meat or if very fat, tried out for dripping with other waste pieces of fat. The feet may be removed at the hock joints, but sawing them off a couple of inches above is better as the hams will then pack much closer in the barrel. The leaf must be peeled out if it has not been done when the animal was dressed, and the tenderloin and spare rib can then be taken out. If the quality of the bacon is to be the best, it must be cut close to the ribs. The side may be cut, lengthwise into three evenly-sized strips, or if it is to be cured and smoked, into two pieces, the upper one-third, called the back strip, for salt pork or lard, and the lower two-thirds for bacon. The ribs and neck bones are generally taken from the shoulder and the bloody spots, and neck meat trimmed down to the shoulder blade, the foot being removed above the knee-joint.

Being so easily preserved without deterioration in quality, pork is a good staple for the country larder. It does not contain so much building material as

beef, and for this reason as well as for variety should be supplemented by fresh meat. It is a fine fuel food, however, and good curing overcomes to a great extent the difficulty of digesting due to the large proportion of fat. When we speak of this it must not be overlooked that bacon does not come under this objection; on account of the granular nature of bacon fat it is one of the most readily digested of flesh foods. The hams, shoulders and bacon strip may be cured and smoked, the loin cut into chops and roasts, or sliced, partially "fried", and sealed in jars for summer use, and all lean trimmings made into sausage, and fat trimmings into lard. The feet may be pickled and the head boiled for head cheese.

#### PRESERVATIVES AND CURING.

The only preservatives necessary for perfect curing and the finest quality of cured meats are salt and sugar or molasses. Salt is an astringent, and if used alone makes the meat hard; sugar or molasses used with it keeps the muscle fibre soft as well as improves the flavor. Saltpetre preserves the natural color of the meat, and if used in small quantities may be almost harmless; it must be remembered, though, that it is a poison. Spices may be used for flavor. They also have an antiseptic effect while baking soda may be used in small quantities to sweeten the brine if there seems to be danger of its spoiling in warm weather. In this case it would be better to boil the brine or make a fresh supply.

#### BRINE FOR SALT PORK.

Although the plain salt pork is not used so much as the sugar cured, many farmers prefer to preserve the sides at least in this way. A brine of 10 pounds of salt and two ounces of saltpetre dissolved in four gallons of boiling water makes good pickle for one hundred pounds of pork. The meat is kept in this until it is used. A clean hard wood barrel makes a suitable vessel for this, but a large stone jar is the ideal, as it can be so thoroughly scalded out and retain no odors.

#### SUGAR CURED HAMS AND BACON.

In sugar curing hams and bacon rub each piece with salt and let it drain over night, then pack in a barrel, putting the hams and bacon in the bottom and filling in with bacon strips. For each one hundred pounds of meat weigh out eight pounds of salt, two pounds of sugar and two ounces of saltpetre. Dissolve in four gallons of water, heat to boiling, cool and pour over the meat. Bacon strips should remain in this brine from four to six weeks; hams and shoulders six to eight weeks before smoking.

#### DRY CURING.

While dry curing requires more work than pickling, it is generally thought to preserve the flavor better. A mixture of five pounds of salt, two pounds of sugar and two ounces of saltpetre will do for one hundred pounds of meat. Andrew Boss, of the University of Minnesota, says: "Rub the meat once every three days with a third of the mixture." This would mean that the meat gets only three "Rubbings," so possibly the farmer who treats his every day for a fortnight is doing a lot of unnecessary work. After the last rubbing the meat should lie in the barrel for a week or ten days, when it will be cured and ready to smoke. It should be cured in a cool moist place in order that the preservative may penetrate well and evenly.

After meat is smoked there is still the difficulty of protecting it from insects. A coat of ground pepper helps a great deal, but if it is to be kept for any length of time, the pieces should be wrapped in paper and put in cotton bags which are then washed outside with a mixture of whitewash and glue.

### TRYING OUT LARD.

After the killing this is a job that the housewife wants to get through with as soon as possible. The fat should be divided into separate lots according to the quality of lard it makes. The leaf fat which makes the best lard should be rendered out first and kept for pastry. The back strip at the side and trimmings from the han., shoulder and neck also make good lard, and the fat taken from about the intestines should not be mixed with these.

When preparing the fat for trying, cut it up into pieces about an inch square so that they will all be tried out in about the same time. Any lean pieces should be removed as they are likely to stick and scorch. Fill a kettle about three-fourths full and put in a quart of water or if convenient a quart of hot lard to prevent the fat from burning before the heat brings out the grease. (Of course any one knows the danger of letting water drop into fat after it is hot). When done, cool slightly and strain through a muslin cloth. Stirring the lard occasionally while cooling, tends to make it white and smooth or adding a little baking soda will have the same effect.

### PORK SAUSAGE.

As the pork usually used for sausage comes from the shoulder, neck and trimmings it is likely to be too fat unless part of the fat is removed and used for lard. There should be at least three times as much lean as fat. The seasoning will vary, of course, to suit the individual taste, but a very good combination consists of twenty pounds pork, eight ounces of salt, two ounces pepper, one ounce sage. After the meat is put through the chopper it may be spread out and the seasoning sprinkled over, then put through the chopper again. This gives a more even mixing than working with the hands. Sausage meat will keep well in a jar with a thin coat of lard over the top, but if you want to case it it hardly pays to bother cleaning casings at home. Strong uniform casings cost very little or long muslin bags two or three inches in diameter may be used. If the meat is to be kept in these for some time they should be rubbed over the outside with melted lard.

Many people prefer sausage made of a mixture of pork and beef. In this case a good proportion to use would be two pounds lean pork, one pound fat pork, and one pound lean beef, seasoning the same as pork sausage.

Any tenderloin that is not used for roasts may be "fried" and put away in jars with dripping poured over it. The fat congealing over the top makes a seal under which the meat keeps well. When this is wanted for use it needs only to be heated in the oven, and it is just like freshly cooked meat. Some housekeepers prefer to keep part of the cured of the ham for summer use in this way.

We are all familiar with the process of making headcheese, the importance of soaking the heads over night and getting rid of the gristle and fat before pressing the cooked meat. A few beef bones boiled with the head meat gives a more jelly like consistency to the liquor.

### PICKLED PIGS' FEET.

Soak the pigs' feet for twelve hours in cold water. Scrape them clean and remove the toes. Boil until soft; four or five hours will usually be required. Salt them when partially done. Pack in a stone jar and cover with hot spiced vinegar. They are served cold, or split, dipped in beaten egg and bread crumbs and fried.



### CORNED BEEF.

The pieces commonly used for corning are the plate, rump, cross ribs, and brisket, or, in other words, the cheaper cuts of meat. The loin, ribs, and other fancy cuts are more often used fresh, and since there is more or less waste of nutrients in corning, this is well. The pieces for corning should be cut into convenient sized joints, say 5 to 6 inches square. It should be the aim to cut them all about the same thickness, so that they will make an even layer in the barrel.

Meat from fat animals makes choicer corned beef than from poor animals. When the meat is thoroughly cooled it should be corned as soon as possible, as any decay in the meat is likely to spoil the brine during the corning process. Under no circumstances should the meat be brined while it is frozen. Weigh out the meat and allow 8 pounds of salt to each 100 pounds; sprinkle a layer of salt one-quarter of an inch in depth over the bottom of the barrel; pack in as closely as possible the cuts of meat, making a layer 5 or 6 inches in thickness; then put on a layer of salt, following that with another layer of meat; repeat until the meat and salt have all been packed in the barrel care being taken to reserve salt enough for a good layer over the top. After the package has stood over night add, for every 100 pounds of meat, 4 pounds of sugar, 2 ounces baking soda, and 4 ounces of saltpetre dissolved in a gallon of tepid water. Three gallons more of water should be sufficient to cover this quantity. In case more or less than 100 pounds of meat is to be corned, make the brine in the proportion given. A loose board cover, weighted down with a heavy stone or piece of iron should be put on the meat to keep all of it under brine. In case any should project, rust would start and the brine would spoil in a short time.

It is not necessary to boil the brine except in warm weather. If the meat has been corned during the winter and must be kept into the summer season, it would be well to watch the brine closely during the spring, as it is more likely to spoil at that time than at any other season. If all the brine appears to be ropy or does not drip freely from the finger when immersed and lifted, it should be turned off and new brine added, after carefully washing the meat. The sugar or molasses in the brine has a tendency to ferment, and, unless brine is kept in a cool place, there is sometimes trouble from this source. The meat should be kept in the brine 28 to 40 days to secure thorough corning.

### DRIED BEEF.

The round is commonly used for dried beef, the inside of the thigh being considered the choicest piece, as it is slightly more tender than the outside of the round. The round should be cut lengthwise of the grain of the meat in preparing for dried beef, so that the muscle fibres may be cut crosswise when the dried beef is sliced for table use. A tight jar or cask is necessary for curing. The process is as follows; To each 100 pounds of meat weigh out five pounds of salt, 3 pounds of granulated sugar, and 2 ounces of saltpetre; mix thoroughly together. Rub the meat on all surfaces with a third of the mixture and pack it in the jar as tightly as possible. Allow it to remain three days, when it should be removed and rubbed again with another third of the mixture. In repacking put at the bottom the pieces that were on top the first time.

## STORING VEGETABLES FOR WINTER USE.

S. C. JOHNSTON, TORONTO.

Vegetables which have been grown to perfection during the summer months with great diligence and care, and gathered while in a prime condition, may be stored for winter use. They will, however, deteriorate rapidly in flavor, and in some cases decompose so much that they are not useable, if proper care has not been exercised in placing them away for winter keeping. Unfortunately, many of the common methods employed on farms and commercial vegetable gardens do not apply to the average backyard garden, in that conditions are very different, and the quantities of vegetables stored are not nearly so abundant as in the former case. The following general information is given in the hope that many of the dwellers in the cities, towns and villages will have more success in keeping some crops which they have grown or purchased in the fall for winter use:—

In all cases it must be remembered that vegetables should receive careful handling. They should not be thrown from one part of the garden to another nor bounced down cellar steps or thrown in cellar windows. Unfortunately, many people have the idea that because a cabbage is only a large vegetable it can with impunity be treated much more carelessly than were it a piece of firewood. The vegetables should be the very best specimens grown in the garden, not too large, but firm and solid, and free from disease or other blemish. Poor, stunted plants should be consumed in the early fall, and the best ones placed away for winter purposes.

Quite possibly the cellar of the home is one of the best places to store the winter's supply of vegetables if it is properly handled. It must be dry, frost proof, and have abundant facilities for easy airing of the vegetable compartment. The most common mistake made by many city dwellers lies in the fact that they keep their cellars too warm, and do not provide for the circulation of fresh air. It is nearly always quite unnecessary to close the cellar windows before well on into December, and further, just because the window has been closed once it does not necessarily need to remain closed until April. The vegetable room should be thoroughly aired often, so that the atmosphere does not become stagnant. Care must, however, be exercised that the vegetables are not allowed to freeze. Where the heating appliances of the house are in the cellar it is almost essential and advisable that that portion of the cellar farthest from these appliances be used for storing the vegetables. A portion may be partitioned off and rough boards only need be used for this purpose. Such a room should, for best results, include at least one window on the sunny side of the house. This compartment may be arranged in a series of shelves and nails may be driven into the joints from which some vegetables may be suspended.

*Potatoes.*—In the city home there is no better arrangement for storing potatoes than building bins which hold two to three bushels of tubers. While it is not absolutely necessary to keep the potatoes from direct contact with the floor, it is better if this is followed out. Narrow strips of board a couple of inches wide may be laid on the floor and the potatoes placed on these. The potatoes in these bins should not receive any light, and to prevent this they may be covered with pieces of canvas or carpet. By the middle of winter it will be necessary to carefully sort over the tubers and remove any which have commenced to decay. One tuber which has developed a rot will spread the disease to all those close to it. Possibly in the

month of March, the potatoes will have commenced to sprout, and they must be again sorted over and all the sprouts removed. It is advisable that these sprouts be removed before they are any length, as they can then be easily broken off by a gentle pressure of the thumb.

*Onions.*—Onions should be thoroughly dry and well cured before being taken into the cellar in the fall. Dampness in onions especially causes decay. The bulbs should be placed in slat boxes which allow a free circulation of air through the whole box. These too should be sorted over and any spoiled ones removed, and also any which have started to grow, placed by themselves.

*Squash.*—This vegetable seems to be the most difficult one to keep, as they are very susceptible to cold and moisture and must be kept warm and dry. They will possibly keep in a better condition for a longer period if they are kept in a room just a little warmer than the compartment in which other vegetables are kept. A room through which a chimney passes is in many cases recommended. Some recommend that they be kept on shelves and others that they be kept in barrels packed in excelsior or straw. If, however, only a few are to be kept they can be covered with rugs or bags and will come through the winter all right.

*Beets, Carrots, Parsnips, Salsify and Turnips.*—These are handled somewhat differently from other vegetables. They require more moisture than others for best results and should be immersed or covered with moist sand. Packing boxes are sometimes used for this purpose. An inch of slightly moistened sand is placed in the bottom of the box and then a layer of vegetables, and so on until the box is filled. If this seems too elaborate a plan for handling these roots they may simply be piled on the floor and covered with earth.

*Celery.*—This plant may be stored during the early winter months with fair success. Before any severe frost in the fall the plants with roots on should be taken up and placed in a box containing a couple of inches of moist sand. The roots should be placed as close together as possible. The room should be kept practically dark and a free circulation of air should be allowed. Toward Christmas the heads should be taken out and used.

*Cabbage.*—In the late fall before permanent freezing up the cabbage should be pulled up and stored for winter use. A few of the outside leaves may be taken off. They may be piled on shelves so arranged that the air will circulate freely around them or they may be tied up in bunches of three and suspended from the ceiling. A pit may be made in the driest part of the garden and the cabbages piled in the form of a pyramid. They should be piled heads down and the succeeding layers bringing the pit to a peak at the top. Earth should be thrown over them as the season advances. If the pit is at all large an air vent should be left. This may be a piece of stone, pipe or a piece of tile set in the peak of the pit. In severe weather this ventilator should be filled with straw or excelsior.

*Tomatoes.*—Sometimes in the fall one sees a tomato vine covered with fruits which under ordinary circumstances would be of little use though freezing. If the whole vine is pulled up and taken to the cellar before it has been frosted the fruits will ripen and may be used up until Christmas in many cases. The vine should be suspended from the ceiling and the windows should be practically darkened.

