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WOMAN’S INSTITUTE LIBRARY OF COOKERY

VOLUME FIVE

FRUIT AND FRUIT DESSERTS

CANNING AND DRYING

JELLY MAKING, PRESERVING, AND PICKLING

CONFECTIONS

BEVERAGES

THE PLANNING OF MEALS

WOMAN’S INSTITUTE OF DOMESTIC ARTS AND SCIENCES, Inc.

PREFACE

This volume, the fifth of the Woman’s Institute Library of Cookery, deals with the varieties of fruits and the desserts that can be made from them, the canning and preserving of foods, the making of confections of every description, beverages and their place in the diet, and every phase of the planning of meals.

With fruits becoming less seasonal and more a daily food, an understanding of them is of great value to the housewife. In _Fruit and Fruit Desserts_, she first learns their place in the diet, their nature, composition, and food value. Then she proceeds with the preparation and serving of every variety of fruit. Included in this section also are fruit cocktails, those refreshing appetizers often used to introduce a special meal.

To understand how to preserve perishable foods in the seasons of plenty for the times when they are not obtainable is a valuable part of a housewife’s knowledge. _Canning and Drying_ deals with two ways of preserving foodstuffs, treating carefully the equipment needed and all the methods that can be employed and showing by means of excellent illustrations, one of them in natural colors, every part of the procedure followed. The fruits and vegetables that permit of canning, as

well as certain meats and fish, are taken up in a systematic manner.

Jelly Making, Preserving, and Pickling continues a discussion of the home preservation of foods, showing how they can be kept for long periods of time not by sterilization, but with the aid of preservatives. Each one of these methods is treated as to its principles, equipment, and the procedure to be followed. After trying the numerous recipes given, the housewife will be able to show with pride the results of her efforts, for nothing adds more to the attractiveness and palatability of a meal than a choice jelly, conserve, marmalade, or jam.

Confections deals with that very delightful and fascinating part of cookery--confection making. Not only are home-made confections cheaper than commercially made ones, but they usually contain more wholesome materials, so it is to the housewife’s advantage to familiarize herself with the making of this food. Recipes are given for all varieties of confections, including taffies, caramels, cream candies, and the confections related to them. Fondant making is treated in detail with illustrations showing every step and directions for making many unusual kinds.

Though beverages often receive only slight consideration, they are so necessary that the body cannot exist very long without them. In _Beverages_ is discussed the relation of beverages to meals, the classes of beverages, and the preparation of those required by the human system, as well as the proper way to serve them. In addition to coffee, tea, cocoa, chocolate, and cereal beverages, fruit, soft, and nourishing drinks receive their share of attention.

To be a successful home maker, it is not enough for a housewife to know how to prepare food; she must also understand how to buy it, how to look after the household accounts, what constitutes correct diet for each member of her family, how to plan menus for her regular meals and for special occasions, and the essentials of good table service. All these things, and many more, she learns in _The Planning of Meals_, which completes this volume.

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THE PLANNING OF MEALS

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FRUIT AND FRUIT DESSERTS

FRUIT IN THE DIET

1. FRUIT, as is generally understood, is the fleshy, juicy product of some plant or tree which, when ripe, is suitable for use as food. Although some fruits are seedless, they generally contain the seeds of the plants or trees that produce them. Many fruits require cooking to make them palatable, others are never cooked, and still others may be cooked or eaten raw, as desired.

Fruits, because they are wholesome, appetizing, and attractive, occupy a valuable place in the diet. In fact, it is these qualities rather than their food value that accounts for the popularity of fruits among all people. In addition to causing fruits to appeal to the esthetic sense, their attractiveness serves another important purpose. It is said that Nature made them attractive in color, odor, and flavor in order that birds might be allured to attack them for food and, by spreading the seeds, assist in their propagation.

2. Fruits are gradually growing to be less seasonal and more a daily food, and are thus constantly becoming more prevalent in the diet. This condition may be attributed to the present rapid means of transportation and the excellent methods of cold storage that exist. Through these agencies it is possible to ship more or less perishable fruits long distances from their native localities and at times of the year other than the particular season in which they are at their best in the places

where they are grown. Thus, fruits that were formerly considered a luxury may now be served regularly, even on the tables of persons having only moderate means.

The fact that fruits are being more extensively used every day is as it should be, for this food is entitled to an important place in the diet of all persons. So important is fruit in the diet that it must be looked on not as one of the things that may be taken or omitted as a person wishes without making any difference either way, but as a food to include in one form or another in nearly every meal. The child who is so young that it cannot take any solid food may have fruit juices included in its diet to decided advantage; but children who are slightly older and adults may take the fruits cooked or raw instead of in the form of juices.

3. As far as the composition of fruits is concerned, it is such that most fresh fruits are not particularly high in food value. However, they are characterized by other qualities that make up for what they lack in this respect; then, too, what they contain in the way of heat-producing or tissue-building material is easily digestible. Most fruits contain considerable acid, and this food substance makes them stimulating to the appetite. Advantage of this fact is taken when fruits are served at the beginning of a breakfast or when several of them are combined in a fruit cocktail and served before luncheon or dinner. This acid produces real stimulation in the stomach, resulting in a flow of gastric juice from the glands of the stomach walls. In addition, the delightful color, the fragrant odor, or the pleasant taste of fruit, although a mental effect, is just as real and just as valuable as the actual stimulation of the acids.

4. Many fruits are eaten raw, while others are cooked either because they require cooking to make them appetizing or because it is desired not to use them in their raw state. The cooking of fruits has a variety of effects on them, being sometimes advantageous and other times detrimental. The flavor is always changed by the application of heat, and in some cases the acid that fruit contains becomes stronger. On the other hand, the fibrous material, or cellulose, of fruits is softened by cooking and thus becomes more digestible. Then, too, the sugar that is usually added to fruits in their cooking increases their food value. Because of these facts, cooked fruits have considerable value and, like raw fruits, should have an important place in the diet. Those fruits which are dried and usually eaten raw, such as figs and dates, supply much nourishment in an easily digestible form.

5. The medicinal value of fruit has long been considered to be of importance, but this may be almost entirely disregarded, for, with the exception of the fact that most fruits are valuable as a laxative, there is nothing to consider. However, several fruits, such as blackberries and bananas, have an anti-laxative effect, and large quantities of these should for the most part be avoided, especially in the feeding of children.

6. In general, fruits are divided into two classes, namely, food fruits

and flavor fruits. As their names imply, _food fruits_ are valuable as food, whereas _flavor fruits_ are those distinguished by a characteristic flavor. It should be remembered that the flavors, as well as the odors, of fruits, are due chiefly to what is known as their volatile, or ethereal, oils. Fruits in which these oils are very strong are often irritating to certain persons and cause distress of some sort after eating.

7. In this Section, it is the purpose to acquaint the housewife with the relative value and uses of the various kinds of fruit, to teach her the best methods of preparation, and to supply her with recipes that will encourage her to make greater use of this valuable food in her family's diet. In this discussion, however, the general classification of fruits is not followed. Instead, the various fruits are arranged alphabetically under the headings Berries, Non-Tropical Fruits, Citrus Fruits, Tropical Fruits, Melons, and Dried Fruits, in order to simplify matters. While it is hardly possible to use fruits too extensively, they must not be allowed to take the place of other more nourishing foods that are required by the body. Therefore, in order to make proper use of them, their value in the diet should not be overlooked.

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NATURE OF FRUITS

ADVANCE IN FRUIT CULTIVATION

8. It is sometimes difficult to distinguish between vegetables and fruits. For instance, the tomato is in reality a fruit, but it is commonly used as a vegetable, and rhubarb is more of a vegetable than a fruit, but it is always used as a fruit. It can therefore be seen that the line between vegetables and fruits is not clearly drawn. It is well to remember that fruit is usually the edible pulpy mass covering the seeds of various plants and trees, and that it is generally cooked or eaten raw with sugar, whereas vegetables are seldom sweetened in cooking.

9. Great strides have been made in the cultivation of fruit. Many varieties that formerly grew wild are now commonly cultivated. Most of the cultivated fruits are superior to the same kind in the wild state, at least in size and appearance, but often there seems to be a loss of flavor. Through cultivation, some fruits that were almost inedible in their wild state on account of containing so many seeds have been made seedless. Also, through cross-cultivation, varieties of fruit different from what formerly existed have been obtained. An example of such fruit is the loganberry which is a cross between a red raspberry and a blackberry and retains many of the qualities of each. However, some small fruits, such as blueberries, or huckleberries, are still grown wild and marketed only from their wild source.

10. While fruit is usually improved by cultivation, there has been a tendency through this means to produce fruits that will stand up for long periods of time, so that they may be marketed at great distances

from the place where they are grown. For instance, apples, especially those found in the market in the spring, and other fruits, which look very fine, will many times be found to have a tough skin and to be almost tasteless.

In general, fruits of delicate flavor and texture cannot be kept very long after they have ripened. To stand shipping, they must be picked in their green stage; then if they are kept in the right temperature they will ripen after picking. Bananas that are to be shipped a long distance are picked when perfectly green, but by the time the consumer buys them they are usually well ripened. In addition to bananas, a few other tropical fruits are shipped out of their native climates in small numbers and are sold at very high prices. However, many tropical fruits cannot be shipped to the Northern States because of their perishable nature.

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COMPOSITION AND FOOD VALUE OF FRUITS

COMPOSITION OF FRUITS

11. The composition of fruits is a matter of considerable importance, for on it the food value of the fruits depends. To a certain extent, the composition of all fruits is the same, but the varieties of this food differ in their food values almost as greatly as do vegetables. Many of them are extremely low in this respect, while a few of them are rather high. In order to determine the place that fruit should have in a meal, it is necessary to obtain a definite idea of the composition as well as the food value of the different varieties.

12. PROTEIN AND FAT IN FRUITS.--Such small quantities of protein and fat are contained in fruits that very little attention need be given to these substances. Exceptions are found in avocados, or alligator pears, and in ripe olives, both of which are high in fat. Then, too, there is a small amount of protein in grapes and some other fruits, but it is not sufficient to merit consideration.

13. CARBOHYDRATE IN FRUIT.--Whatever food value fruits may have, whether it be high or low, is due to the carbohydrate they contain. Some green fruits and bananas contain a very small amount of starch, but on the whole the carbohydrate of fruits is in the form of sugar and is in solution in the fruit juices. The chief form of this carbohydrate is known as _levulose_, or _fruit sugar_. However, _glucose_, another form of sugar, is also found in nearly all fruits, grapes and dried fruits, such as figs, raisins, etc., containing an unusually large amount. In addition, _cane sugar_ is contained in the majority of fruits. _Pectin_ is also a carbohydrate that is found in large quantities in some fruits, while in other fruits it is lacking. This substance is related to the gums and to cellulose. Although it is one of the carbohydrates from which no food value is derived, it is of considerable importance, because it is responsible for the jelly-making properties of fruits.

14. In fruits that are not fully matured, or, in other words, green fruits, the sugar has not developed to so great an extent as it has in perfectly ripe fruits. Consequently, such fruits are not so high in food value as they are when they become ripe. As is well known, it is the sugar of fruits that accounts for their sweet taste, for the sweeter the fruits, the more sugar and the less acid they contain. The quantity of this substance varies from 1 per cent. in lemons to 20 per cent. in some other fresh fruits, such as plums. In dried fruits, the amount of sugar is much higher, reaching as high as 60 per cent. or even more in such fruits as figs, dates, and raisins.

15. CELLULOSE IN FRUIT.--In fruits, as in vegetables, cellulose is found in varying quantities. The larger the quantity, the lower will be the food value of the fruit, except where the water has been evaporated, as in the case of dried fruits. The digestibility of this cellulose, however, is not worth considering, for, while it is possible that small amounts of very young and tender cellulose from fruits may be digested, on the whole this characteristic may be disregarded. The skins and seeds of fruits, as well as the coarse material that helps to make up the pulp, are known as refuse and are treated as such by the human digestive tract; but it is to this waste material, or cellulose, that the laxative quality of fruit is largely due.

In cases where there are digestive or intestinal troubles, it is often necessary to remove the cellulose before the fruit is eaten. The coarse material may be removed and that which is more tender may be broken up by pressing the fruit through a sieve or a strainer of some kind. The cooking of fruits is another means of making the cellulose in them more easily digested, for it softens, or disintegrates, the various particles of the indigestible material. When fruit is taken for its laxative effect and the irritation of the cellulose needs no consideration, the skins of the fruits may be eaten instead of being rejected. However, to avoid any trouble, they should be well chewed.

16. Minerals in Fruit.--All fruits contain a certain percentage of mineral salts. The quantity varies in the different kinds of fruits, but it averages about 1 per cent. These salts have the opposite effect on the blood from those found in meats and cereals, but they act in much the same way as the minerals of vegetables. In other words, they have a tendency to render the blood more alkaline and less acid. They are therefore one of the food constituents that help to make fruit valuable in the diet and should be retained as far as possible in its preparation. In fact, any method that results in a loss of minerals is not a good one to adopt in the preparation of fruits.

The minerals commonly found in fruits are iron, lime, sodium, magnesium, potash, and phosphorus. These are in solution in the fruit juices to a very great extent, and when the juices are extracted the minerals remain in them.

17. Acids in Fruit.--Some fruits contain only a small amount of acid, while others contain larger quantities. It is these acids, together with the sugar and the volatile oils of fruits, that constitute the entire

flavor of this food. Most ripe fruits contain less acid than unripe ones, and cooked fruits are often higher in acid than the same fruits when raw.

Numerous kinds of acid are found in the different varieties of fruits. For example, lemons, oranges, grapefruit, and a few other fruits belonging to the class known as citrus fruits contain _citric acid_; peaches, plums, apricots, and apples, _malic acid_; and grapes and many other fruits, _tartaric acid_.

TABLE I

COMPOSITION AND FOOD VALUE OF FRUITS

Fruit	Water	Protein	Fat	Carbo-hydrate	Mineral Matter	Food Value per Pound, in Calories
Apples, fresh	84.6	.4	.5	14.2	.3	290
Apples, dried	28.1	1.6	2.2	66.1	2.0	1,350
Apricots, fresh	85.0	1.1	--	13.4	.5	270
Apricots, dried	29.4	4.7	1.0	62.5	2.4	1,290
Bananas	75.3	1.3	.6	22.0	.8	460
Blackberries	86.3	1.3	1.0	10.9	.5	270
Cherries	80.9	1.0	.8	16.7	.6	365
Cranberries	88.9	.4	.6	9.9	.2	215
Currants	85.0	1.5	--	12.8	.7	265
Dates	15.4	2.1	2.8	78.4	1.3	1,615
Figs, fresh	79.1	1.5	--	18.8	.6	380
Figs, dried	18.8	4.3	.3	74.2	2.4	1,475
Grapefruit	86.9	.8	.2	11.6	.5	240
Grapes	77.4	1.3	1.6	19.2	.5	450
Huckleberries	81.9	.6	.6	16.6	.3	345
Lemons	89.3	1.0	.7	8.5	.5	205
Muskmelons	89.5	.6	--	9.3	.6	185
Nectarines	82.9	.6	--	15.9	.6	305
Oranges	86.9	.8	.2	11.6	.5	240
Peaches	89.4	.7	.1	9.4	.4	190
Pears	84.4	.6	.5	14.1	.4	295
Persimmons	66.1	.8	.7	31.5	.9	630
Pineapple	89.3	.4	.3	9.7	.3	200
Plums	78.4	1.0	--	20.1	.5	395
Pomegranates	76.8	1.5	1.6	19.5	.6	460
Prunes, fresh	79.6	.9	--	18.9	.6	370
Prunes, dried	22.3	2.1	--	73.3	2.3	1,400
Raisins	14.6	2.6	3.3	76.1	3.4	1,605
Raspberries, red	85.8	1.0	--	12.6	.6	255
Raspberries, black	84.1	1.7	1.0	12.6	.6	310
Rhubarb	94.4	.6	.7	3.6	.7	105
Strawberries	90.4	1.0	.6	7.4	.6	180
Watermelon	92.4	.4	.2	6.7	.3	140

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18. The juice of fruits that contain very little sugar and a large quantity of acid, such as the lemon, may be used for the seasoning of food in much the same way that vinegar is used. It may also be diluted with other liquids and used for a beverage. Then, again, various kinds of fruit juices are subjected to a process of fermentation and, through the production of another acid, are made into vinegar and wines. When apples are treated in this way, the fermentation produces _acetic acid_ and, in addition, a certain amount of alcohol. It is on this principle that the making of wines depends.

19. WATER IN FRUIT.--The water content of fresh fruits is very high, reaching 94 per cent. in some varieties. Dried fruits, on the other hand, contain much less water, their content being in some cases as low as 15 to 20 per cent. It naturally follows that the fruits low in water are high in food value, while those containing considerable water have in their composition less of the material that adds food value. The high percentage of water in fresh fruits, together with the acids they contain, accounts for the fact that these fruits are so refreshing. Fruits of this kind, in addition to having this refreshing quality, help to provide the necessary liquid in the diet.

20. TABLE SHOWING COMPOSITION AND FOOD VALUE OF FRUITS.--Just as fruits vary in their composition, so do they vary in their food value. This fact is clearly shown in Table I, which gives the percentage of food substances contained in different fruits and the food value per pound, in calories, that these fruits contain. As in the table showing the composition and food value of vegetables given in _Vegetables_, Part 1, the figures in this table are taken from Atwater's Table of American Food Materials and refer to the edible part of the material. Reference to Table I, as progress is made with the study of fruits and their preparation, will be of much assistance in learning the place that fruits occupy in the dietary.

FOOD VALUE OF FRUITS

21. EFFECT OF RIPENESS ON FRUITS.--There is a very marked difference between ripe and green fruits as to their composition, flavor, texture, palatability, and digestibility. Green fruits, containing more acid than ripe ones, serve some purposes for which ripe fruits of the same variety cannot be used so well. For instance, a very much better jelly can be made from grapes that are not entirely ripe than from those which have completely ripened. Green fruits contain less sugar than do ripe ones, and so they are more sour to the taste. In some cases, the carbohydrate found in green fruits is partly in the form of starch, which in the process of development is changed to sugar. The cellulose of green fruits, especially that distributed throughout the pulp of the fruit itself, is usually tougher and harder than that which is found in the same fruit after it has ripened.

22. DIGESTIBILITY OF FRUITS.--The ripeness and freshness of fruits

determine their digestibility to a great extent, but the peculiarities of each person have much to do with this matter. Many times a particular fruit will agree with almost every one but a few exceptional persons, and, for no apparent reason except their own peculiarities of digestion, it disagrees very badly with them. Abnormal conditions of the alimentary tract, however, cannot be taken into consideration in a general discussion on the digestibility of foods, for it is a subject that cannot be treated except from a dietetic standpoint. A safe rule to follow when a fruit is found to disagree with a person is to omit it from that person's diet. This need not prove a hardship, for the wide range, or variety, of fruits makes it possible to find one or more kinds that will agree with each person.

23. As has been explained, sugar is the food material from which the nutritive value of fruits is obtained. With the exception of a few predigested foods, manufactured in such a way that they can be digested easily, this sugar is probably the most easily digested form of food that can be obtained. This substance, being held in solution in the fruit juices, which are encased in a cellulose covering, depends to some extent for its digestion on the hardness of the cellulose. When this covering is old and hard or green and tough, as the case may be, it is difficult for the digestive juices to break through and attack the sugar contained inside. As this difficulty is not encountered when fruit is fresh and ripe, its freshness and ripeness become important factors in digestibility. Cooking is also an important factor because it softens the cellulose, but there are certain other changes made by cooking that must be taken into consideration as well.

24. EFFECT OF COOKING ON FRUIT.--Cooking affects fruits in numerous ways, depending on the condition of the fruit itself, the method used, and the length of time the heat is applied. When fruits are cooked in water or in a thin sirup, the cellulose becomes softened. On the other hand, if they are cooked in a heavy sirup, as, for instance, in the making of preserves, the cellulose becomes hardened and the fruit, instead of breaking up, remains whole or nearly so and becomes tough and hard in texture. The addition of quantities of sugar, as in the latter case, besides helping to keep the fruit whole, increases its food value.

25. Another change that usually takes place when fruit is cooked is in its flavor. This change is due either to an increase in the acid contained in the fruit or to a decrease in the amount of sugar. Some authorities believe that cooking increases the amount of acid, while others hold the view that, when fruit is cooked without removing the skins and seeds, the acid contained in the seeds and skins and not noticeable when the fruit is fresh, is released during the cooking. Such is undoubtedly the case with plums. The change that is brought about in the sugar by the cooking of fruits consists in changing the cane sugar into levulose and dextrose, which are not so sweet. This change accounts for the fact that some cooked fruits are less sweet than others, in spite of the fact that the acid does not seem to be increased.

26. In addition to producing certain changes in fruit, cooking, if done

thoroughly, renders fruits sterile, as it does other foods; that is, it kills any bacteria that the fruits may contain. Advantage of this fact is taken when fruits are canned for future use. Although most persons prefer raw fruit to that which is cooked, there are some who object to eating this food raw, but who are not always certain as to the reason for their objection. Like other raw foods, fruits in their fresh state contain _vitamines_; that is, a substance that helps to keep the body in a healthy, normal condition. These are found to some extent in cooked fruits, but not in the same quantity as in raw ones; consequently, as much use as possible should be made of raw fruits in the diet.

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FRUITS AND THEIR PREPARATION AS FOOD

PREPARING AND SERVING

27. REQUIRED SANITARY CONDITIONS.--Since large quantities of fruits are eaten raw, it is necessary that they be handled in the most sanitary manner if disease from their use be prevented. However, they are often in an unsanitary condition when they reach the housewife. For instance, they become contaminated from the soiled hands of the persons who handle them, from the dirt deposited on them during their growth, from the fertilizer that may be used on the soil, from flies and other insects that may crawl over them, and from being stored, displayed, or sold in surroundings where they may be exposed to the dirt from streets and other contaminating sources. Because of the possibility of all these sources of contamination, it is essential that fruits that are not to be cooked be thoroughly washed before they are eaten. It is true that a certain amount of flavor or food material may be lost from the washing, but this is of little importance compared with the possibility of preventing disease.

28. WASHING FRUITS.--The manner of washing fruits depends largely on the nature of the fruit. Fruits that have a sticky surface, such as raisins, figs, and dates, usually have to be washed in several waters. Hard fruits, such as pears, apples, plums, etc., should be washed with running water. Berries and softer fruits require more careful procedure, it usually being advisable to pour them into a pan containing water and then, after stirring them around in the water until all dirt is removed, take them from the water, rather than pour the water from them. In any event, all fruits eaten raw should be properly washed.

29. SERVING FRUITS.--While the serving of fruits is a simple matter, it should be done in as dainty a way as possible, so as not to detract from their natural attractiveness. If the skins are to remain on the fruits while serving, a knife, preferably a fruit knife, should be served with them, and nothing smaller than a salad plate should be used. The carefully washed leaves of the fruit served make an attractive garnish. For instance, large, perfect strawberries with the stems on, when heaped on a plate garnished with strawberry leaves and served with a small dish of powdered sugar, are always attractive. Likewise, a bunch of grapes served on grape leaves never fails to attract.

A mixture of a number of fruits, such as peaches, pears, and plums, or, in winter, oranges, bananas, and apples, piled in a large bowl and passed after salad plates have been distributed, not only makes an excellent dessert, but permits the persons served to take their choice.

Fresh berries, sliced peaches, bananas, oranges, etc. may be served in sauce dishes, which should be placed on a service plate. They may be passed or served from a bowl by the hostess. Canned or stewed fruits may be served in the same way.

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BERRIES

NATURE AND CARE

30. BERRIES are among the most perishable fruits and begin to come into market early in the summer season. In most localities, the berry season begins with strawberries and ends with blackberries. Because the numerous varieties are somewhat juicy and soft and therefore extremely perishable, they will not stand shipping and storage for long periods of time. The quality of berries depends much on the nature of the season, as well as on the locality in which the berries are grown. If there is a good supply of rain, the berries will be very moist, containing a large amount of pulp in proportion to seeds and skins; but if the season is very dry, the berries are likely to be less moist and consequently less palatable. A general use of berries, and to almost every one the most important, is the making of jams, jellies, and preserves.

In the preparation of berries for the table, they should be handled as little as possible in order to prevent them from breaking up and losing their shape. After being purchased, they should be kept where it is cool until they are to be used. It is advisable not to wash them until just before serving, as the extra handling usually bruises them and causes them to spoil.

The different varieties of berries are here taken up in alphabetical order so as to make the matter easy for reference. Those of which extensive use is made contain one or more recipes that may be followed without any hesitation. In a few instances, as in the case of currants, recipes are not included, as the fruits are limited to only a few uses and directions for these occur elsewhere.

BLACKBERRIES

31. BLACKBERRIES come late in the summer season. Good varieties of cultivated blackberries, which are large in size and contain comparatively few seeds, are the best for use. However, in some localities, uncultivated blackberries grow in sufficient quantities to be useful for food. Blackberries are used extensively for jam, as they make an excellent kind that appeals to most persons. Their juice may be

used for jelly, but if the berries are to be utilized most successfully in this way they must be picked before they are thoroughly ripe or some fruit that will supply an additional quantity of pectin may have to be combined with them. Fresh blackberries may be served for dessert with sugar and cream. Otherwise, the use of this fruit in desserts is not very extensive, except where the canned berries are used for pastry or pie or are eaten for sauce or where the jam is used in making up various dessert dishes.

Very little preparation is necessary in getting blackberries ready to serve. They should simply be looked over carefully, so that all imperfect ones and all foreign matter may be removed, and then washed in cold water.

32. BLACKBERRY SPONGE.--One of the few desserts made from fresh blackberries is that explained in the accompanying recipe and known as blackberry sponge. This is very delicious, for the berries are combined with cake and the combination then served with whipped cream.

BLACKBERRY SPONGE
(Sufficient to Serve Six)

1 qt. blackberries
3/4 c. sugar
1 c. water
4 pieces plain loaf or sponge cake
Whipped cream

Heat half of the berries with the sugar and the water until they are mushy. Then force the whole through a sieve. Cut the cake into cubes and put them into a bowl. Pour the juice and the blackberry pulp on the cake. Press the mixture down with a spoon until it is quite solid and set in the refrigerator or some other cold place to cool. Turn out of the bowl on a large plate, garnish with the remaining berries, heap with the whipped cream, and serve.

BLUEBERRIES

33. BLUEBERRIES, which are not cultivated, but grow in the wild state, are a many-seeded berry, blue or bluish-black in color. _Huckleberries_, although belonging to a different class, are commonly regarded as blueberries by many persons. Berries of this kind occur in many varieties. Some grow on low bushes close to the ground, others are found on taller bushes, and still others grow on very tall bushes. Again, some grow in dry ground in a mountainous region, others grow in a level, sandy soil, and other varieties succeed better on swampy soil. Berries of this class are not so perishable as most other berries, but in many localities they cannot be purchased at all, for, as a rule, they are used only in the immediate vicinity in which they grow.

Blueberries have small seeds and coarse, tough skins. They contain very little acid, but are excellent for pies and sauce. However, they will

make jelly very well if there are a few partly ripe berries among them, and their flavor is improved if some fruit containing acid is added to them. To prepare them for use, whether they are to be served raw or cooked, look them over carefully in order that all green or spoiled ones are removed and then wash them well in cold water.

34. PRESSED BLUEBERRY PUDDING.--A delicious pudding can be made by combining blueberries with slices of bread. The accompanying recipe gives directions for pudding of this kind.

PRESSED BLUEBERRY PUDDING
(Sufficient to Serve Eight)

1 qt. blueberries
1 c. water
1/2 c. sugar
8 slices bread
Whipped cream

Put the blueberries, water, and sugar into a saucepan and boil for a few minutes. Put four of the slices of bread, which should be cut about 1/2 inch thick, in the bottom of a square pan. Pour one-half of the blueberries and the juice over the bread, and put the four remaining slices of bread on top of the berries. Pour the rest of the blueberries and juice over the bread. Place another square pan over the top and weight it down so as to press the pudding. Then set the pudding in the refrigerator until it is cool. Cut into squares, remove from the pan, and serve with sweetened whipped cream.

35. BLUEBERRY PUDDING.--A baking-powder-biscuit dough baked with blueberries makes a very appetizing dessert. To serve with a pudding of this kind, a cream or a hard sauce should be made.

BLUEBERRY PUDDING
(Sufficient to Serve Six)

Baking-powder-biscuit dough
1 qt. blueberries
1/2 c. sugar

Make a rather thin baking-powder-biscuit mixture. Spread a layer of this in the bottom of a square pan and cover it with a layer of the blueberries. Pour 1/4 cupful of the sugar over the berries and then cover with another layer of the dough. Over this, pour the remainder of the berries and sprinkle the rest of the sugar over all. Place in the oven and bake for about 20 minutes. Remove from the oven, cut into squares, and serve with cream or hard sauce.

CRANBERRIES

36. CRANBERRIES grow wild in many localities, but most persons who use them buy them in the market as a cultivated fruit. Their season begins

in the fall and lasts until early spring, and during this time they can usually be obtained in the market. They contain considerable acid and consequently require a great deal of sugar to make them sufficiently sweet to be palatable. They are more often served as an accompaniment to a dinner course, especially with turkey or other poultry, than eaten as a sauce. At times they are used in the making of muffins, pudding, and various kinds of pastry.

One of the advantages of cranberries is that they keep very well in the raw state. However, before they are cooked, they should be looked over carefully, freed of any stems, foreign material, and spoiled berries, and then washed thoroughly in cold water.

37. CRANBERRY SAUCE.--One can hardly imagine a turkey dinner without cranberry sauce as one of the accompaniments; but it may be served when meats other than turkey are used. In fact, because of its tart flavor, it forms a most appetizing addition to any meal.

CRANBERRY SAUCE
(Sufficient to Serve Six)

1-1/2 c. water
2 c. sugar
4 c. cranberries

Add the water to the cranberries and place over the fire to cook in a closely covered kettle. As soon as the skins of the berries have cracked, add the sugar. Cook slowly for a few minutes or until the sugar is completely dissolved. Remove from the fire and cool before serving.

38. CRANBERRY JELLY.--If the cranberries are preferred without the skins, cranberry jelly should be tried. When cool, this solidifies and may be served in attractive ways.

CRANBERRY JELLY
(Sufficient to Serve Six)

2 c. water
1 qt. cranberries
2 c. sugar

Pour the water over the cranberries and cook them for 10 or 15 minutes. Then mash them through a sieve or a colander with a wooden potato masher. Add the sugar to the mashed cranberries. Return to the heat and cook for 5 to 8 minutes longer. Turn into a mold and cool.

RASPBERRIES

39. RASPBERRIES come in two general varieties, which are commonly known as _red_ and _black_. There are many species of each kind, and all of them are much favored, as they are delicious fruit. As a raw fruit, raspberries have their most satisfactory use, but they may be made into

several excellent desserts and they are also much used for canning and preserving. They are a perishable fruit and so do not keep well. Because of their softness, they have to be washed very carefully to prevent them from breaking or becoming mushy.

40. RED-RASPBERRY WHIP.--No more dainty dessert can be made than raspberry whip, which is explained in the accompanying recipe. Cake that is not very rich, such as ladyfingers or sponge cake, makes a very good accompaniment for this dessert.

RED-RASPBERRY WHIP
(Sufficient to Serve Six)

1 qt. raspberries
1 c. powdered sugar
2 egg whites

Put the raspberries, sugar, and egg whites into a bowl. Mash the berries before starting to whip. Beat the mixture with an egg whip until it is reduced to a pulpy mass and is stiff and fluffy. Pile lightly into a bowl, chill, and serve with ladyfingers or sponge cake.

41. RASPBERRY SHORTCAKE.--Either black or red raspberries make a delicious shortcake when combined with a cake or a biscuit mixture. Directions for making such a shortcake are given in the accompanying recipe.

RASPBERRY SHORTCAKE
(Sufficient to Serve Six)

1 qt. raspberries
1 c. sugar
Biscuit or plain-cake dough

Mash or chop the berries, as preferred, and add the sugar to them. Bake the biscuit or plain-cake dough in a single, thick layer, and when it has been removed from the pan split it into halves with a sharp knife. Spread half the berries between the two pieces of biscuit or cake and the remaining half on top. Cut into pieces of the desired size and serve with plain or whipped cream.

STRAWBERRIES

42. STRAWBERRIES are perhaps more popular than any other kind of berry. They are reddish in color, have a somewhat acid flavor, and range in size from 1/2 inch to 2 inches in diameter. Strawberries are much used for jams and preserves; they may also be used for making a delicious jelly, but as they lack pectin this ingredient must be supplied. These berries are eaten fresh to a great extent, but are also much used for pastry making and for various kinds of dessert; in fact, there is practically no limit to the number of recipes that may be given for strawberries. Before they are used in any way, they should be washed

thoroughly in cold water and then their hulls should be removed.

[Illustration: FIG. 1]

43. STRAWBERRY SHORTCAKE.--For strawberry shortcake, either a biscuit or a plain-cake mixture may be used, some persons preferring the one and other persons the other. This may be made in a large cake, as shown in Fig. 1, and then cut into pieces, or it may be made into individual cakes, as Fig. 2 shows. Whichever plan is followed, the cakes are split in the same way and the crushed berries inserted between the halves. This dish may be made more attractive in appearance if a few of the finest berries are saved and used as a garniture.

STRAWBERRY SHORTCAKE
(Sufficient to Serve Six)

1 qt. strawberries
1 c. sugar
Biscuit or plain cake dough

Mash or chop the berries, add the sugar to them, and let them stand until the sugar has dissolved. Bake the biscuit or plain-cake dough in a single thick layer or, if desired, bake it in individual cakes, cutting the biscuit dough with a cookie cutter and putting the cake mixture in muffin pans. Remove from the pan, cut in two with a sharp knife, and spread half of the berries over the lower piece. Set the upper piece on the berries. In the case of the large cake, sprinkle powdered sugar over the top and then on this arrange a number of the largest and finest of the berries, as Fig. 1 shows, as a garniture. Cut in pieces of the desired size and serve with or without either plain or whipped cream. In preparing the individual cakes, spread a spoonful or two of the crushed berries over the top, as Fig. 2 shows, and serve with whipped cream.

44. STRAWBERRY WHIP.--Strawberries may be used instead of raspberries in the recipe for red-raspberry whip. When prepared in this way and served with fresh cake, strawberries make a very appetizing dessert.

45. OTHER STRAWBERRY DESSERTS.--If it is desired to serve strawberries just with sugar, they can be made attractive with very little effort. Garnish a plate with some of the strawberry leaves and on them place a few fine large strawberries that have been washed but have not had the hulls removed. Serve a small dish of powdered sugar with the strawberries, so that they may be dipped into the sugar and eaten by holding the hull of the berry in the fingers. Strawberries crushed with sugar and served with blanc mange or custard also make a very delicious dessert.

[Illustration: FIG. 2]

MISCELLANEOUS BERRIES

46. CURRANTS come in three varieties--red, white, and black. They are

not often eaten fresh, but are generally utilized for making jellies, jams, and preserves, or for pastry and pies. When they are to be used for jelly, it is not necessary to pick them from the stems, as they may be washed and cooked on their stems. Some varieties of currants are dried and these are used extensively in the making of cakes, cookies, etc. The usefulness of this fruit as a food is not so great as many others. No recipes are given for it because of its little use in the fresh form.

47. GOOSEBERRIES, like currants, are somewhat limited in their variety of uses, being seldom used except for jelly, preserves, and pies. Before gooseberries are ripe they are light green in color and rather sour in taste, but as they ripen the amount of acid they contain decreases, so that they become sweet in flavor and change to brownish-purple. Green gooseberries are often canned for pies, and when in this state or when partly ripe they are also made up into many kinds of preserves and jelly. In their preparation for these uses, both the stems and the blossom ends should be removed. As a rule, berries of this kind keep very well and stand considerable handling because their outside skin is very tough.

48. LOGANBERRIES are a fruit produced by crossing a variety of red raspberries with a species of blackberry. They are not very common, but are an excellent berry and are well liked by those who can obtain them. They may be used for any purpose for which either raspberries or blackberries are used. Therefore, in the recipes given for these two kinds of berries, loganberries may be substituted whenever they can be obtained.

* * * * *

NON-TROPICAL FRUITS

NATURE AND USE

49. Besides the berries that have just been described, there are a large number of fruits that are grown in temperate climates and are therefore regarded as NON-TROPICAL FRUITS. Extensive use is made of these fruits in the regions in which they are grown or in places that are within easy shipping distances of the source of supply. All of them have a protective covering, or skin, and consequently keep for long periods of time if they are not too ripe when picked. Those which contain the highest percentage of water are the most perishable.

APPLES

50. APPLES, of which there are at least a thousand varieties, are probably the best known of the non-tropical fruits. Some apples mature early in the summer, while others do not ripen until late in the fall. The late apples can be kept during the entire winter if they are properly stored, but the summer varieties must generally be used

immediately, as they do not have good keeping qualities. In each locality in which apples are grown, a few varieties seem to be especially popular and are used to the exclusion of others. Some apples are good for one purpose and some for another. For instance, many that are excellent if eaten raw are not good for cooking purposes, and others that cook well are not suitable for eating. It is therefore a good idea for the housewife to become familiar with the varieties of apples raised in her community and to learn the use to which each kind can be put to advantage.

Apples of all kinds may be prepared in a large variety of ways. They are much used for sauce, pie, and numerous desserts, as well as for jelly and, with various fruit mixtures, for jams and preserves. The juice of apples, which upon being extracted is known as _cider_, is used in a number of ways, but its most important use is in the manufacture of vinegar.

51. APPLE SAUCE.--When apple sauce is to be made, apples that are somewhat sour and that will cook soft easily should be selected. This is a dessert that can be made all during the winter when it is often difficult to obtain other fruits fresh. It is usually served when roast pork is the main dish of a meal, but is just as appetizing when served with other foods.

APPLE SAUCE
(Sufficient to Serve Six)

10 medium-sized apples
1/2 c. water
1 c. sugar

Wash the apples, cut them in quarters, remove the cores, and, if desired, peel them. Put them into a saucepan, add the water, and allow them to cook until they are very soft. If the apples are inclined to be dry, a little more water may be necessary. When done, force them through a colander or a sieve, add the sugar to the pulp, and return to the stove. Cook until the sugar is completely dissolved and, if necessary, until the apple sauce is slightly thickened, stirring frequently to prevent scorching. Remove from the heat, and season with lemon peel cut fine, cinnamon, or nutmeg.

If there are apples in supply that do not cook well for apple sauce, they may be peeled, quartered, and cored, and cooked with the sugar and water. Then, instead of being forced through a sieve, they should be allowed to remain in pieces in the sirup.

52. PORCUPINE APPLES.--A pleasing change in the way of an apple dessert may be had by making porcupine apples.

PORCUPINE APPLES
(Sufficient to Serve Six)

6 large apples

1 c. sugar
1 c. water
2 doz. almonds
Currant jelly

Wash, core, and pare the apples. Make a sirup by bringing the sugar and water to the boiling point. Put the apples into the sirup, cook on one side for several minutes, and then turn and cook on the other side. Do not allow the apples to cook completely in the sirup, but when they are still hard remove them and continue to boil the sirup down. Set the apples in a shallow pan, stick the almonds, which should be blanched, into them so that they will project like porcupine quills, sprinkle them with sugar, and bake in the oven until they are soft and the almonds slightly brown. Remove from the oven, fill the center of each with currant jelly, pour the juice over them, and serve.

53. BAKED APPLES.--Nothing is more palatable than baked apples if a juicy, sour variety can be secured.

BAKED APPLES
(Sufficient to Serve Six)

6 medium-sized sour apples
1/2 c. brown sugar
1/2 tsp. cinnamon
1 Tb. butter
1/2 c. water

Wash and core the apples, place them in a baking dish, and fill the centers with the brown sugar mixed with the cinnamon. Put a small piece of butter on top of each apple, pour the water in the bottom of the pan, set in the oven, and bake until the apples are soft. Baste frequently with the juice that collects in the bottom of the pan. Serve hot or cold, as desired.

Apples baked in this way may be improved in flavor by serving grape juice over them. Heat the grape juice, and then, if the apples are to be served hot, pour about 2 tablespoonfuls over each apple just before serving. In case the apples are to be served cold, pour the hot grape juice over them and then allow them to cool.

54. MAPLE APPLES.--Apples cooked in maple sirup have a very pleasing flavor. The sirup that remains in the pan is poured over the apples when they are served.

MAPLE APPLES
(Sufficient to Serve Six)

6 medium-sized apples
1 c. maple sirup

Wash, peel, and core the apples. Bring the maple sirup to the boiling point in a saucepan. Drop the apples into the hot sirup, cook first on

one side, and then turn and cook on the other. As soon as they become soft, remove from the sirup, pour the sirup over them, and serve.

55. STEAMED APPLES.--If it is desired to retain the color in apples that have red skins, they should be steamed instead of baked, for the color is lost in baking. Prepare apples that are to be steamed by washing them and removing the cores. Place the apples in a pan with a perforated bottom, put this over a pan of boiling water, cover closely, and steam until they are soft. Serve in any desired way. They will be found to be delicious in flavor and attractive in appearance.

APRICOTS

56. APRICOTS, in appearance, are a cross between peaches and plums. They are grown extensively in the western part of the United States, but they can be grown in any climate where peaches and plums are raised. As they contain considerable acid, they require a large quantity of sugar when they are cooked with their skins and seeds. They are used most frequently for canning, but they make excellent marmalades and jams. They are also dried in large quantities and, in this form, make delicious desserts.

57. APRICOT SOUFFLÉ--No more attractive as well as delicious dessert can be prepared than apricot soufflØ, which is illustrated in Fig. 3. The apricots are just tart enough to give it a very pleasing flavor.

[Illustration: Fig. 3]

APRICOT SOUFFLÉ
(Sufficient to Serve Six)

2 Tb. butter
4 Tb. flour
1/3 c. sugar
Pinch of salt
1 c. scalded milk
3 eggs
1/2 tsp. vanilla
1 can apricots

Melt the butter, add the flour, sugar, and salt, and stir in the hot milk. Bring this mixture to the boiling point. Separate the yolks and whites of the eggs. Beat the yolks until they are thick and lemon-colored, and then pour the hot mixture over them, stirring constantly to prevent the eggs from curding. Beat the whites until they are stiff, fold them into the mixture, and add the vanilla. Place the apricots without juice in a layer on the bottom of the buttered baking dish, pour the mixture over them, and bake for 45 to 60 minutes in a hot oven, when it should be baked through and slightly brown on top and should appear as in Fig. 3. Remove from the oven and serve with the sirup from the apricots. Whipped cream may also be added if desired.

CHERRIES

58. CHERRIES come in numerous varieties, some of which are sweet and others sour. The method of using them in cookery depends largely on the kind of cherry that is to be used. Any of the varieties may be canned with varying quantities of sugar and then used for sauce. They also make excellent preserves, especially the sour varieties. However, they do not contain pectin in sufficient quantity for jelly, so that when cherry jelly is desired, other fruit or material containing pectin must be used with the cherries. When purchased in the market, cherries usually have their stems on. They should be washed before the stems are removed. The seeds may be taken out by hand or by means of cherry seeders made especially for this purpose.

59. CHERRY FRITTERS.--Something different in the way of dessert can be had by making cherry fritters according to the accompanying recipe.

CHERRY FRITTERS
(Sufficient to Serve Six)

1 c. flour
2 tsp. baking powder
1/4 tsp. salt
2 Tb. sugar
1/2 c. milk
1 egg
2 Tb. butter
1/2 c. cherries cut into halves

Mix and sift the dry ingredients, add the milk and egg, and beat all together well. Add the melted butter and fold in the cherries. Drop by spoonfuls into hot fat and fry until brown. Remove from the fat, sprinkle with powdered sugar, and serve.

GRAPES

60. GRAPES are a fruit extensively cultivated both for eating and for the making of wines and raisins. Although found in many varieties, they naturally divide themselves into two general classes: those which retain their skins, such as the Malaga, Tokay, Muscat, Cornichon, Emperor, etc., and those which slip out of their skins easily, such as the Concord, Niagara, Delaware, Catawba, etc.

Grapes are much used as a fresh fruit. When they are to be used in this way, the bunches should be put into a colander and washed thoroughly by running cold water over them. Then all the imperfect ones should be removed and the grapes kept cool until they are to be served. Clean grape leaves make an attractive garnish for the individual plates or the serving dish on which the grapes are placed. Grapes are also used extensively for making jelly and grape juice, a beverage that is well liked.

61. It will be found that through proper care grapes can be kept a long time in the fall after they are removed from the vines, provided perfect bunches are obtained and they are picked before they have become too ripe. To preserve such grapes, dip the ends of the stems into melted sealing wax in order to prevent the evaporation of moisture through the stems. Then, in a cool, dry place, lay the bunches out on racks in a single layer, taking care not to crush nor bruise them.

62. UNFERMENTED GRAPE JUICE WITH WATER.--Grape juice may be made either with or without water. That in which water is used in the making usually requires no diluting when it is served as a beverage. Concord grapes are perhaps used more commonly for the making of grape juice than any other variety, but other kinds, particularly Catawbas and Niagaras, may be used as well.

UNFERMENTED GRAPE JUICE WITH WATER

12 qt. grapes
2 qt. water
4 lb. sugar

Wash the grapes and remove them from the stems. Put them with the water into a preserving kettle, and heat gradually until the skins of the grapes burst. Dip off as much juice as possible, and put it into a jelly bag. Continue to heat and dip off the juice in this way until the pulp is comparatively dry. Then add a little more water to the pulp and put it in the bag to drip. When all the juice has dripped through the bag, pour it back into the preserving kettle, add the sugar, and bring to the boiling point. Stir frequently, so that the sugar will be well dissolved. Pour into jars or bottles, seal, and sterilize by cooking for about 5 minutes in hot water that nearly covers the bottles. Any large receptacle that will hold sufficient water may be used as a sterilizer.

63. UNFERMENTED GRAPE JUICE WITHOUT WATER.--When grape juice is made without water, it is both thick and rich. Consequently, it should usually be diluted with water when it is served as a beverage.

UNFERMENTED GRAPE JUICE WITHOUT WATER

12 qt. grapes
3 lb. sugar

Wash the grapes, remove them from the stems, and put them into a preserving kettle. Heat very slowly and mash with a spoon, so that enough juice will be pressed out and thus prevent the grapes from scorching. Remove the juice as it forms and put it into a jelly bag. When all of it has been taken from the grapes and strained through the jelly bag, strain the pulp and put all the juice into a preserving kettle, add the sugar, and bring to the boiling point. Pour into bottles or jars, seal, and sterilize in a water bath for about 5 minutes.

PEACHES

64. PEACHES may be divided into two general classes: those having a yellow skin and those having a white skin. In each of these classes are found both _clingstone_ and _freestone_ peaches; that is, peaches whose pulp adheres tightly to the seed, or stone, and those in which the pulp can be separated easily from the stone. When peaches are purchased for canning or for any use in which it is necessary to remove the seeds, freestones should be selected. Clingstones may be used when the stones are allowed to remain in the fruit, as in pickled peaches, and for jams, preserves, or butters, in which small pieces may be used or the entire peach mashed. Whether to select yellow or white peaches, however, is merely a matter of taste, as some persons prefer one kind and some the other.

65. Peaches are not satisfactory for jelly making, because they do not contain pectin. However, the juice of peaches makes a very good sirup if it is sweetened and cooked until it is thick. Such sirup is really just as delicious as maple sirup with griddle cakes. Peaches are used to a large extent for canning and are also made into preserves, jams, and butters. In addition, they are much used without cooking, for they are favored by most persons. When they are to be served whole, they should be washed and then wiped with a damp cloth to remove the fuzz. The skins may be removed by blanching the peaches in boiling water or peeling them with a sharp knife. If they are then sliced or cut in any desirable way and served with cream and sugar, they make a delicious dessert.

66. STEWED PEACHES.--Fresh stewed peaches make a very desirable dessert to serve with simple cake or cookies. Children may very readily eat such dessert without danger of digestive disturbances. Adding a tablespoonful of butter to the hot stewed peaches and then serving them over freshly made toast makes a delightful breakfast dish. The cooked peaches may also be run through a sieve, reheated with a little flour or corn starch to thicken them slightly, and then served hot on buttered toast.

STEWED PEACHES
(Sufficient to Serve Eight)

1-1/2 qt. peaches
1 lb. sugar
1 c. water

Peel the peaches, cut into halves, and remove the seeds. Put the sugar and water over the fire to cook in a saucepan and bring to a rapid boil. Add the peaches and cook until they may be easily pierced with a fork.

67. BAKED PEACHES.--When peaches are to be baked, select large firm ones. Wash them thoroughly and cut them into halves, removing the stones. Place the peaches in a shallow pan, fill the cavities with sugar, and dot the top of each half with butter. Set in the oven and bake until the peaches become soft. Serve hot or cold, either with or without cream, as desired.

PEARS

68. PEARS, like apples, come in summer and winter varieties. The summer varieties must be utilized during the summer and early fall or must be canned at this time to preserve them for future use. Winter pears, however, may be stored, for they keep like apples. A number of the small varieties of pears are much used for pickling. Pears are most valuable when they are canned and used for sauce. They cannot be used for jelly, because they do not contain sufficient acid nor pectin. The juice from canned pears, because of its mild flavor, is often found to be valuable in the feeding of invalids or persons who have gastric troubles. It is usually advisable to pick pears before they are entirely ripe, for then they may be kept for a considerable length of time and will ripen slowly.

69. BAKED PEARS.--Although pears are rather mild in flavor, they are delicious when baked if lemon is added. Wash thoroughly pears that are to be baked, cut them into halves, and remove the cores. Place them in a shallow pan, fill the holes in the center with sugar, dot with butter, and place a thin slice of lemon over each piece. Pour a few spoonfuls of water into the pan, set in the oven, and bake until the pears can be easily pierced with a fork. Remove from the oven and serve hot or cold.

PLUMS

70. PLUMS are among the very strong acid fruits. Some varieties of them seem to be more tart after they are cooked than before, but, as already explained, this condition is due to the fact that the acid contained in the skin and around the seeds is liberated during the cooking. This fruit, of which there are numerous varieties, is generally used for canning, preserving, etc. It does not make jelly successfully in all cases unless some material containing pectin is added. Very firm plums may have the skins removed by blanching if it seems advisable to take them off.

71. STEWED PLUMS.--Because of the many varieties of plums with their varying degrees of acidity, it is difficult to make a recipe with a quantity of sugar that will suit all kinds. The recipe given here is suitable for medium sour plums, such as egg plums and the common red and yellow varieties. Damsons and green gages will probably require more sugar, while prune plums may require less.

STEWED PLUMS
(Sufficient to Serve Eight)

1-1/2 qt. plums
1 lb. sugar
3/4 c. water

Wash the plums and prick each one two or three times with a fork. Bring the sugar and water to the boiling point and, when rapidly boiling, add

the plums. Cook until they are tender, remove from the fire, cool, and serve.

QUINCES

72. QUINCES are one of the non-perishable fruits. They mature late in the fall and may be kept during the winter in much the same way as apples. While quinces are not used so extensively as most other fruits, there are many uses to which they may be put and much can be done with a small quantity. For instance, various kinds of preserves and marmalades may be made entirely of quinces or of a combination of quinces and some other fruit. They also make excellent jelly. As their flavor is very strong, a small quantity of quince pulp used with apples or some other fruit will give the typical flavor of quinces. When combined with sweet apples, they make a very delicious sauce.

The skin of quinces is covered with a thick fuzz, which can be removed by wiping the fruit with a damp cloth. A point that should be remembered about quinces is that they are extremely hard and require long cooking to make them tender and palatable.

73. STEWED QUINCES AND APPLES.--The combination of quinces and apples is very delicious. Sweet apples, which are difficult to use as a cooked fruit because of a lack of flavor, may be combined very satisfactorily with quinces, for the quinces impart a certain amount of their strong flavor to the bland apples and thus the flavor of both is improved.

STEWED QUINCES AND APPLES
(Sufficient to Serve Six)

1 qt. sweet apples
1 pt. quinces
1 lb. sugar
1 c. water

Wash, peel, core, and quarter the fruit. Add the sugar to the water and place over the fire until it conies to a rapid boil. Then add the quinces and cook until they are partly softened. Add the sweet apples and continue the cooking until both are tender. Remove from the fire, cool, and serve.

RHUBARB

74. RHUBARB is in reality not a fruit, but it is always considered as such because it is cooked with sugar and served as a fruit. It has the advantage of coming early in the spring before there are many fruits in the market. As it contains a large quantity of oxalic acid, it is very sour and must be cooked with considerable sugar to become palatable, the addition of which makes the food value of cooked rhubarb very high. Rhubarb is much used for pies and is frequently canned for sauce. It is also used as a cheap filler with a more expensive fruit in the making of

marmalades, conserves, and jams.

The stems of some varieties of rhubarb are characterized by a great deal of red color, while others are entirely green. The red rhubarb makes a more attractive dish when it is cooked and served than the green, but it has no better flavor. The outside of the stem has a skin that may be removed by catching hold of it at one end with a knife and stripping it off the remainder of the stem. It is not necessary to remove the skin from young and tender rhubarb, but it is often an advantage to remove it from rhubarb that is old. It should be remembered that the stems of rhubarb contain considerable water and so require very little liquid in their cooking.

75. STEWED RHUBARB.--Two methods of stewing rhubarb are in practice, the one to select depending on the way it is preferred. In one method, which keeps the pieces whole, the sugar and water are brought to the boiling point before the rhubarb is added, while in the other, the rhubarb is cooked with water until it is soft and the sugar then added.

STEWED RHUBARB
(Sufficient to Serve Six)

2 c. sugar
1/2 c. water
1 qt. cut rhubarb

Mix the sugar and water in a saucepan and bring to the boiling point. Wash the stems of the rhubarb and cut into inch lengths. Add the rhubarb to the sirup and cook until it is tender enough to be pierced with a fork. If desired, a flavoring of lemon peel may be added. Turn into a dish, allow to cool, and serve.

If the other method is preferred, cook the rhubarb with the water until it is soft and then add the sugar.

* * * * *

CITRUS FRUITS

CHARACTERISTICS

76. Fruits that contain citric acid are grouped together and are known as CITRUS FRUITS. All of these are similar in structure, although they differ in size, as will be observed from Fig. 4. Here the citrus fruits most commonly used are illustrated, the large one in the center being a grapefruit; the two to the left, oranges; the two to the right, lemons; and the two in the front, tangerines.

[Illustration: FIG. 4]

All varieties of these fruits are tropical or semitropical and are shipped to the North in boxes that contain various numbers, the number that can be packed in a box depending on the size of the fruit. The

south, southeastern, and western parts of the United States supply practically all of these fruits that are found in the northern markets. They stand storage well and keep for long periods of time if they are packed before they are too ripe. These characteristics, together with the fact that they are at their prime at different times in different localities, make it possible to market such fruits during the entire year, although they are much better at certain seasons than at others.

77. The majority of citrus fruits contain a fair amount of sugar and a great deal of water; consequently, they are very juicy and refreshing. A few of them, however, such as lemons and limes, contain very little sugar and considerable acid and are therefore extremely sour. In the use of such varieties, sugar must be added to make them palatable.

The greatest use made of citrus fruits is that of serving them raw. However, they are also used in the making of marmalades, conserves, and such confections as candied fruits. Then, too, the juice of a number of them, such as lemons, oranges, and limes, makes very refreshing beverages, so these varieties are much used for this purpose.

GRAPEFRUIT

78. Grapefruit, also known as _shaddock_, is a large, pale-yellow fruit belonging to the citrus group. One variety, known as the _pomelo_, is the kind that is commonly found in the market. It is slightly flattened on both the blossom and stem ends.

Grapefruit has a typical flavor and a slightly bitter taste and contains neither a great deal of sugar nor a large amount of acid. Because of its refreshing, somewhat acid pulp and juice, it is highly prized as a fruit to be eaten at breakfast or as an appetizer for a fruit cocktail. It is also much used in the making of fruit salads.

79. SELECTION OF GRAPEFRUIT.--Grapefruit should be selected with care in order that fruit of good quality may be obtained. Some persons think that to be good grapefruit should be large, but it should be remembered that size is not the factor by which to judge the quality. The fruit should be heavy for its size and the skin should be fine-grained and even. Coarse-grained skin, as a rule, is thick and indicates that the pulp is rather pithy and without juice.

[Illustration: FIG. 5]

80. PREPARATION OF GRAPEFRUIT.--Different ways of serving grapefruit are in practice, and it is well that these be understood. This is generally considered a rather difficult fruit to eat, but if care is exercised in its preparation for the table it can be eaten with comfort. For preparing grapefruit, a narrow, sharp-bladed paring knife may be used. As is well known, a grapefruit is always cut apart half way between the stem and the blossom ends and a half served to each person.

[Illustration: FIG. 6]

81. One method of preparing grapefruit consists in cutting the skin in such a way that the seeds can be taken out and the pulp then easily removed with a spoon. To prepare it in this way, cut the grapefruit into halves, and then, with a sharp knife, cut around the pithy core in the center, cutting off the smallest possible end of each of the sections. With this done, remove the seeds, which will be found firmly lodged near the core and which can be readily pushed out with the point of the knife. Then cut down each side of the skin between the sections so as to separate the pulp from the skin. Around the edge next to the outside skin, cut the pulp in each section with a single jab of the knife, taking care not to cut the skin between the sections. The entire pulp of each section, which will be found to be loose on both sides and ends if the cutting is correctly done, can then be readily removed with a spoon.

[Illustration: FIG. 7]

82. In another method of preparing this fruit for the table, all the skin inside of the fruit is removed and nothing but the pulp is left. This method, which is illustrated in Figs. 5 to 10, inclusive, requires a little more time and care than the previous one, but the result justifies the effort. After cutting the grapefruit into halves, remove the seeds with a sharp knife, as shown in Fig. 5. Then, with the same knife, cut the grapefruit from the skin all the way around the edge, as in Fig. 6; also, cut down each side of the skin between the sections, so as to separate the pulp from the skin, as in Fig. 7. With the pulp loosened, insert a pair of scissors along the outside edge, as in Fig. 8, and make a slanting cut toward the core.

[Illustration: FIG. 8]

Then, as in Fig. 9, cut the core loose from the outside skin. Repeat this operation for each section. If the cutting has been properly done, the core and skin enclosing the sections may be lifted out of the grapefruit, and, as shown in Fig. 10, will then be in the form of a many-pointed star. As only the pulp remains in the outside skin, the grapefruit can be eaten without difficulty.

[Illustration: FIG. 9]

83. SERVING GRAPEFRUIT.--When grapefruit has been properly ripened, it is rather sweet, so that many persons prefer it without sugar; but when sugar is desired, the fruit is very much more delicious if it is prepared some time before it is to be served, the sugar added to it, and the fruit placed in a cool place. If this is done in the evening and the grapefruit is served for breakfast, a large amount of very delicious juice will have collected through the night. At any rate, grapefruit is best if it is sweetened long enough before it is served to give the sugar a chance to penetrate.

[Illustration: FIG. 10]

LEMONS

84. LEMONS are a citrus fruit raised in tropical regions. They are shipped to other climates in cases that hold from 180 to 540, depending on the size of the lemons, 300 to the case being a medium and commonly used size. Their quality is judged like that of grapefruit; that is, by their weight, the texture of their skin, and their general color and shape.

Lemons contain very little sugar, but they are characterized by a large amount of acid. Because of this fact, their juice is used to season foods in much the same way as vinegar is used. In fact, their chief uses are in making desserts and in seasoning such foods as custards, pudding sauces, etc. However, their juice is also much used in the making of beverages, such as lemonade and fruit punch.

ORANGES

85. ORANGES belong to the group of citrus fruits, but they differ from both lemons and grapefruit in that they contain more sugar and less acid. Two kinds of oranges supply the demands for this fruit, Florida and California oranges. _Florida oranges_ have a skin more the color of lemons and grapefruit and contain seeds, but they are considered to be the finest both as to flavor and quality. _California oranges_, which have a bright-yellow or orange skin, are seedless and are known as _navel oranges_. As soon as the Florida season ends, the California season begins; consequently, the market season for this fruit is a lengthy one. The russet of oranges is caused by the bite of an insect on the skin. To be shipped, oranges are packed in cases that will contain from 48 to 400 to the case.

Probably no citrus fruit is used so extensively as oranges. Because of their refreshing subacid flavor, they are much eaten in their fresh state, both alone and in combination with other foods in numerous salads and desserts.

[Illustration: FIG. 11]

86. PREPARATION OF ORANGES.--Several attractive ways of preparing oranges for the table when they are to be eaten raw are shown in Fig. 11.

To prepare them in the way shown at the left, cut the orange into two parts, cutting half way between the stem and blossom ends, and loosen the pulp in each half in the manner explained in Art. 81 for the preparation of grapefruit. Then the pulp may be eaten from the orange with a spoon.

[Illustration: FIG. 12]

If an orange is to be eaten in sections, the skin may be cut from the stem to the blossom end about six times and then loosened from the one

end and turned in toward the orange in the manner shown in the central figure of the group. It will then be easy to remove the skin.

[Illustration: FIG. 13]

Sometimes it is desired to serve sliced oranges, as shown at the right. To prepare oranges in this way, remove the skin from the orange, cut it in halves lengthwise, and then slice it in thin slices crosswise. Arrange the slices on a plate and serve as desired.

87. When oranges are to be used for salads, or for any purpose in which merely the pulp is desired, as, for instance, orange custard, all the skin between the sections must be removed, as it makes any warm mixture bitter. To secure the pulp without any of the skin, first peel the orange, as shown in Fig. 12, in the same way an apple is peeled, beginning at one end and peeling around and around deeply enough to remove with the skin all the white pithy material under it. If the knife is a sharp one and the peeling is carefully done, there will be little waste of the pulp. When the orange is entirely peeled, cut each section from the skin by passing the knife as closely as possible between the pulp and the skin, as shown in Fig. 13. The sections thus obtained may be used whole or cut into pieces of any desired size.

MISCELLANEOUS CITRUS FRUITS

88. In addition to grapefruit, lemons, and oranges, the three principal varieties of citrus fruits, this group also includes kumquats, limes, mandarins, and tangerines. These fruits are not of so much importance in the diet as the other varieties, but when they are used as foods they have a food value about equal to that of apples the same in size. They are not in such common use as the citrus fruits already discussed, but it is well for every housewife to know what they are and to what use they can be put.

89. KUMQUATS are an acid fruit resembling oranges in color but being about the size and shape of small plums. They are used principally for the making of marmalades and jams, and in this use both the skin and the pulp are included.

90. LIMES look like small lemons. They are very sour and do not contain sugar in any quantity. They are valued chiefly for their juice, which is utilized in the making of drinks, confections, etc.

91. MANDARINS and TANGERINES are really varieties of oranges and are used in much the same way. They have a very sweet flavor. Their skin does not cling so closely as the skin of oranges. For this reason they are known as _glove oranges_ and are very easily peeled.

* * * * *

TROPICAL FRUITS

VARIETIES

92. Besides the citrus fruits, which may also be regarded as tropical fruits because they grow in tropical regions, there are a number of other fruits that may be conveniently grouped under the heading Tropical Fruits. The best known of these are bananas and pineapples, but numerous others, such as avocados, guavas, nectarines, pomegranates, tamarinds, and mangoes, are also raised in the tropical countries and should be included in this class. The majority of these fruits stand shipment well, but if they are to be shipped to far distant places they must be picked before they become too ripe and must be packed well. As bananas and pineapples are used more extensively than the other tropical fruits, they are discussed here in greater detail; however, enough information is given about the others to enable the housewife to become familiar with them.

BANANAS

93. BANANAS are a tropical fruit that have become very popular with the people in the North. As they are usually picked and shipped green and then ripened by a process of heating when they are ready to be put on the market, it is possible to obtain them in a very good condition. It should be remembered, however, that they are not ripe enough to eat until all the green color has left the skin. The stem of the bunch may be green, but the bananas themselves should be perfectly yellow. Black spots, which are sometimes found on the skins, indicate overripeness or bruises. When the spots come from overripeness, however, they do not injure the quality of the fruit, unless there are a great many of them; in fact, many persons consider that bananas are better when the skins are black than at any other time.

94. Just under the skin of the banana is some pithy material that clings to the outside of the fruit and that has a pungent, disagreeable taste. This objectionable taste may be done away with by scraping the surface of the banana slightly, as shown in Fig. 14, after the skin is removed.

The strong, typical flavor that characterizes bananas is due to the volatile oil they contain. It is this oil that causes bananas to disagree with some persons. The common yellow variety has a milder flavor than red bananas and certain other kinds and, consequently, is more popular. If the oil of bananas does not prove irritating, much use should be made of this fruit, because its food value is high, being about double that of apples and oranges.

[Illustration: FIG. 14]

95. Bananas are eaten raw more often than in any other way, but many persons find cooked bananas very agreeable. Then, too, it is sometimes claimed that cooked bananas are more digestible than raw ones because of the starch that bananas contain. However, this argument may be discounted, for a well-ripened banana contains such a small quantity of starch that no consideration need be given to it.

[Illustration: FIG. 15]

96. BAKED BANANAS.--If bananas are to be cooked, they can be made very appetizing by baking them with a sirup made of vinegar, sugar, and butter. When prepared in this way, they should be cut in two lengthwise, and then baked in a shallow pan, as Fig. 15 shows.

BAKED BANANAS
(Sufficient to Serve Six)

6 bananas
2 Tb. butter
1/3 c. sugar
3 Tb. vinegar

Remove the skins from the bananas, scrape the surface as in Fig. 14, and cut them in half lengthwise. Arrange the halves in a shallow pan. Melt the butter and mix it with the sugar and the vinegar. Pour a spoonful of the mixture over each banana and then set the pan in the oven. Bake in a slow oven for about 20 minutes, basting frequently with the remainder of the sirup during the baking. Remove from the oven and serve hot.

97. Banana Fritters.--Delicious fritters can be made with bananas as a foundation. The accompanying recipe, if carefully followed, will result in a dish that will be appetizing, especially to those who are fond of this fruit.

BANANA FRITTERS
(Sufficient to Serve Six)

4 bananas
1 Tb. lemon juice
1/2 c. flour
2 Tb. sugar
1/4 tsp. salt
1/3 c. milk
1 egg
1 Tb. butter, melted
Powdered sugar

Remove the skins from the bananas, scrape them, and cut them once lengthwise and once crosswise. Sprinkle the pieces with the lemon juice. Make a batter by mixing and sifting the flour, sugar, and salt. Stir in the milk gradually, and add the yolk of the beaten egg and the melted butter. Lastly, fold in the beaten egg white. Sprinkle the bananas with powdered sugar, dip them into the batter, and fry in deep fat until brown. Sprinkle again with powdered sugar and serve.

PINEAPPLES

98. Pineapples are grown in the southern part of the United States, on

the islands off the southeastern coast, and in Hawaii. They vary in size according to the age of the plants. It requires from 18 to 20 months for the fruit to develop, and the plants yield only four or five crops. Much of this fruit is canned where it is grown, but as it is covered with a heavy skin it will tolerate shipping long distances very well. It is shipped to the market in cases that contain from 24 to 48 pineapples to the case. Usually, for a few weeks during the summer, the price of fresh pineapples is reasonable enough to warrant canning them.

[Illustration: FIG. 16]

99. The food value of pineapples is slightly lower than that of oranges and apples. However, pineapples have a great deal of flavor, and for this reason they are very valuable in the making of desserts, preserves, marmalades, and beverages of various kinds. It is said that the combination of pineapple and lemon will flavor a greater amount of food than any other fruit combined. Another characteristic of pineapples is that they contain a ferment that acts upon protein material and therefore is sometimes thought to aid considerably in the digestion of food. The probabilities are that this ferment really produces very little action in the stomach, but its effect upon protein material can readily be observed by attempting to use raw pineapple in the making of a gelatine dessert. If the pineapple is put in raw, the gelatine will not solidify; but if the pineapple is heated sufficiently to kill this ferment, it has no effect whatsoever upon the gelatine.

[Illustration: FIG. 17]

100. SELECTING PINEAPPLES.--When pineapples are to be selected, care should be exercised to see that they are ripe. The most certain way of determining this fact is to pull out the center leaves of each pineapple that is chosen. As shown in Fig. 16, grasp the pineapple with one hand and then with the other pull out, one at a time, several of the center leaves of the tuft at the top. If the fruit is ripe a sharp jerk will usually remove each leaf readily, but the harder the leaves pull, the greener the pineapple is.

[Illustration: FIG. 18]

An overripe pineapple is just as unsatisfactory as one that is not ripe enough. When a pineapple becomes too ripe, rotten spots begin to develop around the base. Such spots can be easily detected by the discoloration of the skin and such a pineapple should not be selected.

[Illustration: FIG. 19]

101. PREPARATION OF PINEAPPLE.--Some persons consider pineapple a difficult fruit to prepare, but no trouble will be experienced if the method illustrated in Figs. 17 to 19 is followed. Place the pineapple on a hard surface, such as a wooden cutting board, and with a large sharp knife cut off the tuft of leaves at the top. Then, as shown in Fig. 17, cut the pineapple into 1/2-inch slices crosswise of the head. When the entire pineapple has been sliced, peel each slice with a sharp paring

knife, as in Fig. 18. With the peeling removed, it will be observed that each slice contains a number of eyes. Remove these with the point of a knife, as Fig. 19 shows. After cutting out the core from the center of each slice, the slices may be allowed to remain whole or may be cut into pieces of any desirable size or shape. Pineapple prepared in this way is ready either for canning or for desserts in which it is used fresh.

102. PINEAPPLE PUDDING.--One of the most satisfactory desserts made from pineapple is the pudding given here. It is in reality a corn-starch pudding in which grated pineapple is used for the flavoring.

PINEAPPLE PUDDING
(Sufficient to Serve Six)

2-1/2 c. scalded milk
1/3 c. corn starch
1/2 c. sugar
1/4 tsp. salt
1/4 c. cold milk
1-1/2 c. grated pineapple, canned or fresh
2 egg whites

Scald the milk by heating it over the fire in a double boiler. Mix the corn starch, sugar, and salt, and dissolve in the cold milk. Add to the scalded milk in the double boiler and cook for about 15 or 20 minutes. Remove from the fire and add the grated pineapple from which all juice has been drained. Then fold in the whites of the eggs beaten stiff. Pour into molds previously dipped in cold water, allow to cool, and serve with cream.

MISCELLANEOUS TROPICAL FRUITS

103. AVOCADOS.--The avocado, which is also known as the _alligator pear_, is a large pear-shaped, pulpy fruit raised principally in the West Indies. It has a purplish-brown skin and contains just one very large seed in the center. The flesh contains considerable fat, and so the food value of this fruit is rather high, being fully twice as great as a like quantity of apples or oranges.

This fruit, which is gaining in popularity in the Northern States, is very perishable and does not stand shipment well. As a rule, it reaches the northern market green and is ripened after its arrival. It is an expensive fruit and is used almost entirely for salads. As its flavor is somewhat peculiar, a taste for it must usually be cultivated.

104. GUAVAS.--The guava is a tropical fruit that is extensively grown in the southern part of the United States. Guavas come in two varieties: _red guava_, which resembles the apple, and _white guava_, which resembles the pear. The fruit, which has a pleasant acid pulp, is characterized by a more or less peculiar flavor for which a liking must be cultivated. It can be canned and preserved in much the same way as peaches are.

Because guavas are very perishable, they cannot be shipped to northern markets, but various products are made from them and sent to every market. Preserved and pickled guavas and confections made from what is known as guava paste are common, but guava jelly made from the pulp is probably the best known product.

105. NECTARINES.--The tropical fruit called the nectarine is really a variety of peach, but it differs from the common peach in that it has a smooth, waxy skin. Also, the flesh of the nectarine is firmer and has a stronger flavor than that of the peach. Nectarines are not shipped to the northern markets to any extent, but they are canned in exactly the same way as peaches are and can be secured in this form.

106. PERSIMMONS.--The persimmon is a semitropical plum-like fruit, globular in shape and an orange-red or yellow in color. It comes in many varieties, but few of them find their way into the northern markets. The Japanese persimmon, which resembles a tomato in color, is the variety most frequently purchased. Persimmons are characterized by a great deal of very pungent acid, which has a puckery effect until the fruit is made sweet and edible by exposure to the frost. In localities where they are plentiful, persimmons are extensively used and are preserved for use during the winter season.

107. POMEGRANATES.--The pomegranate is about as large as a full-sized apple and has a hard reddish-yellow rind. Most varieties contain many seeds and a comparatively small amount of red edible pulp. Pomegranates of various kinds are grown in the southern part of the United States and in other warm climates. They are used extensively in the localities where they are grown and are much enjoyed by persons who learn to care for their flavor. A cooling drink made from their pulp finds much favor.

108. TAMARINDS AND MANGOES.--Although tamarinds and mangoes are practically unknown outside of tropical countries, they are considered to be very delicious fruits and are used extensively in their native localities.

The tamarind consists of a brown-shelled pod that contains a brown acid pulp and from three to ten seeds. This fruit has various uses in medicine and cookery and is found very satisfactory for a cooling beverage.

Mangoes vary greatly in size, shape, flavor, and color. Some varieties are large, fleshy, and luscious, while others are small and stringy and have a peculiar flavor.

MELONS

109. CANTALOUPES AND MUSKMELONS.--The variety of melons known as muskmelons consists of a juicy, edible fruit that is characterized by a globular shape and a ribbed surface. Cantaloupes are a variety of muskmelons, but the distinction between them is sometimes difficult to

understand. For the most part, these names are used interchangeably with reference to melons.

Considerable variation occurs in this fruit. Some cantaloupes and muskmelons are large and others are small; some have pink or yellow flesh and others have white or light-green flesh. All the variations of color and size are found between these two extremes. The flesh of these fruits contains considerable water; therefore, their food value is not high, being only a little over half as much as that of apples.

110. If melons suitable for the table are desired, they should be selected with care. To be just at the right stage, the blossom end of the melon should be a trifle soft when pressed with the fingers. If it is very soft, the melon is perhaps too ripe; but if it does not give with pressure, the melon is too green.

111. Various ways of serving muskmelons and cantaloupes are in practice. When they are to be served plain as a breakfast food or a luncheon dessert, cut them crosswise into halves, or, if they are large, divide them into sections lengthwise. With the melons cut in the desired way, remove all the seeds and keep the melons on ice until they are to be served. The pulp of the melon may also be cut from the rind and then diced and used in the making of fruit salads. Again, the pulp may be partly scraped out of the melon and the rinds then filled with fruit mixtures and served with a salad dressing for a salad or with fruit juices for a cocktail. The pulp that is scraped out may be diced and used in the fruit mixture, and what is left in the rind may be eaten after the contents have been eaten.

112. CASABA MELONS.--The variety of melons known as casaba, or honeydew, melons are a cross between a cucumber and a cantaloupe. They have white flesh and a rind that is smoother than the rind of cantaloupes. Melons of this kind are raised in the western part of the United States, but as they stand shipment very well, they can usually be obtained in the market in other regions. They are much enjoyed by those who are fond of this class of fruit. Their particular advantage is that they come later in the season than cantaloupes and muskmelons, and thus can be obtained for the table long after these other fruits are out of season. Casaba melons may be served in the same ways as cantaloupes.

113. WATERMELONS.--A very well-known type of melon is the watermelon. It is grown principally in warm climates of the Southern States, as the season in the North is not sufficiently long to allow it to develop. This is a large fruit, having a smooth green skin that is often mottled or striped, and a pinkish pulp containing many seeds and having a sweet, watery juice. The large amount of water contained in this fruit makes its food value very low, it being lower in this respect than muskmelons and cantaloupes. The volatile oil it contains, which is responsible for its flavor, proves irritating to some persons who eat it.

114. Watermelon is delicious when it is served ice cold. Therefore, before it is served, it should be kept on ice for a sufficient time to allow it to become thoroughly cold. Then it may be cut in any desirable

way. If it is cut in slices, the slices should be trimmed so that only the pink pulp that is edible is served, the green rind being discarded. As an appetizer, watermelon is delicious when cut into pieces and served in a cocktail glass with fresh mint chopped fine and sprinkled over the top. Small pieces of watermelon cut with a French vegetable cutter make a very attractive garnish for fruit salads and other fruit mixtures.

FRUIT COCKTAILS

115. Cocktails made of a combination of fruits are often served as the first course of a meal, usually a luncheon or a dinner, to precede the soup course. In warm weather, they are an excellent substitute for heavy cocktails made of lobster or crab, and they may even be used to replace the soup course. The fruits used for this purpose should be the more acid ones, for the acids and flavors are intended to serve as an appetizer, or the same purpose for which the hot and highly seasoned soups are taken. Therefore, they are seldom made sweet and are not taken for their food value. Besides being refreshing appetizers, they afford a hostess an opportunity to carry out a certain color scheme in a meal. Many kinds of fruit may be combined into cocktails, but directions for the cocktails that are usually made are here given. Fruit cocktails should always be served ice cold.

116. GRAPEFRUIT COCKTAIL.--The cocktail here explained may be served in stemmed glasses or in the shells of the grapefruit. If the fruit shells are to be used, the grapefruit should be cut into two parts, half way between the blossom and the stem ends, the fruit removed, and the edges of the shell then notched. This plan of serving a cocktail should be adopted only when small grapefruits are used, for if the shells are large more fruit will have to be used than is agreeable for a cocktail.

GRAPEFRUIT COCKTAIL
(Sufficient to Serve Six)

2 grapefruits
2 oranges
1 c. diced pineapple, fresh or canned
Powdered sugar

Remove the pulp from the grapefruits and oranges in the manner previously explained. However, if the grapefruit shells are to be used for serving the cocktail, the grapefruit should be cut in half and the pulp then taken out of the skin with a sharp knife. With the sections of pulp removed, cut each one into several pieces. Add the diced pineapple to the other fruits, mix together well and set on ice until thoroughly chilled. Put in cocktail glasses or grapefruit shells, pour a spoonful or two of orange juice over each serving, sprinkle with powdered sugar, garnish with a cherry, and serve ice cold.

117. SUMMER COCKTAIL.--As strawberries and pineapples can be obtained fresh at the same time during the summer, they are often used together in a cocktail. When sweetened slightly with powdered sugar and allowed

to become ice cold, these fruits make a delicious combination.

SUMMER COCKTAIL
(Sufficient to Serve Six)

2 c. diced fresh pineapple
2 c. sliced strawberries
Powdered sugar

Prepare a fresh pineapple in the manner previously explained, and cut each slice into small pieces or dice. Wash and hull the strawberries and slice them into small slices. Mix the two fruits and sprinkle them with powdered sugar. Place in cocktail glasses and allow to stand on ice a short time before serving.

118. FRUIT COCKTAIL.--A fruit cocktail proper is made by combining a number of different kinds of fruit, such as bananas, pineapple, oranges, and maraschino cherries. As shown in Fig. 20, such a cocktail is served in a stemmed glass set on a small plate. Nothing more delicious than this can be prepared for the first course of a dinner or a luncheon that is to be served daintily. Its advantage is that it can be made at almost any season of the year with these particular fruits.

[Illustration: FIG. 20]

FRUIT COCKTAIL
(Sufficient to Serve Six)

2 bananas
1 c. canned pineapple
2 oranges
1 doz. maraschino cherries
Lemon juice
Powdered sugar

Peel the bananas and dice them. Dice the pineapple. Remove the pulp from the oranges in the manner previously explained, and cut each section into several pieces. Mix these three fruits. Cut the cherries in half and add to the mixture. Set on ice until thoroughly chilled. To serve, put into cocktail glasses as shown in the illustration, and add to each glass 1 tablespoonful of maraschino juice from the cherries and 1 teaspoonful of lemon juice. Sprinkle with powdered sugar and serve.

* * * * *

DRIED FRUITS

VARIETIES OF DRIED FRUITS

119. The fruits that have been discussed up to this point are fresh fruits; that is, they are placed on the markets, and consequently can be obtained, in their fresh state. However, there are a number of fruits that are dried before they are put on the market, and as they can be

obtained during all seasons they may be used when fresh fruits are out of season or as a substitute for canned fruits when the household supply is low. The chief varieties of dried fruits are dates, figs, prunes, which are dried plums, and raisins, which are dried grapes. Apples, apricots, and peaches are also dried in large quantities and are much used in place of these fruits when they cannot be obtained in their fresh form. Discussions of the different varieties of dried fruits are here given, together with recipes showing how some of them may be used.

DATES

120. DATES, which are the fruit of the date palm, are not only very nutritious but well liked by most persons. They are oblong in shape and have a single hard seed that is grooved on one side. As dates contain very little water and a great deal of sugar, their food value is high, being more than five times that of apples and oranges. They are also valuable in the diet because of their slightly laxative effect. When added to other food, such as cakes, hot breads, etc., they provide a great deal of nutriment.

121. The finest dates on the market come from Turkey and the Eastern countries. They are prepared for sale at the places where they grow, being put up in packages that weigh from 1/2 to 1 pound, as well as in large boxes from which they can be sold in bulk. It is very important that all dates, whether bought in packages or in bulk, be thoroughly washed before they are eaten. While those contained in packages do not collect dirt after they are packed, they are contaminated to a certain extent by the hands of the persons who pack them. To be most satisfactory, dates should first be washed in hot water and then have cold water run over them. If they are to be stuffed, they should be thoroughly dried between towels or placed in a single layer on pans to allow the water to evaporate. While the washing of dates undoubtedly causes the loss of a small amount of food material, it is, nevertheless, a wise procedure.

122. Dates can be put to many valuable uses in the diet. They are much used in cakes, muffins, and hot breads and in fillings for cakes and cookies. Several kinds of delicious pastry, as well as salads and sandwiches, are also made with dates. Their use as a confection is probably the most important one, as they are very appetizing when stuffed with nuts, candy, and such foods.

FIGS

123. FIGS are a small pear-shaped fruit grown extensively in Eastern countries and to some extent in the western part of the United States. The varieties grown in this country are not especially valuable when they are dried, but they can be canned fresh in the localities where they are grown. Fresh figs cannot be shipped, as they are too perishable, but when dried they can be kept an indefinite length of time and they are highly nutritious, too. In fact, dried figs are nearly as

high in food value as dates, and they are even more laxative.

124. Dried figs are found on the market both as pressed and pulled figs. _Pressed figs_ are those which are pressed tightly together when they are packed and are so crushed down in at least one place that they are more or less sugary from the juice of the fig. _Pulled figs_ are those which are dried without being pressed and are suitable for such purposes as stewing and steaming.

125. STEWED FIGS.--If pulled figs can be secured, they may be stewed to be served as a sauce. When prepared in this way, they will be found to make a highly nutritious and delightful breakfast fruit or winter dessert.

STEWED FIGS
(Sufficient to Serve Six)

2 c. pulled figs
3 c. water

Wash the figs and remove the stems. Put them into a preserving kettle with the water and allow them to come slowly to the boiling point. Simmer gently over the fire until the figs become soft. If they are desired very sweet, sugar may be added before they are removed from the heat and the juice then cooked until it is as thick as is desirable. Serve cold.

126. STEAMED FIGS.--When figs are steamed until they are soft and then served with plain or whipped cream, they make a delightful dessert. To prepare them in this way, wash the desired number and remove the stems. Place them in a steamer over boiling water and steam them until they are soft. Remove from the stove, allow them to cool, and serve with cream.

PRUNES

127. PRUNES are the dried fruit of any one of several varieties of plum trees and are raised mostly in Southern Europe and California. In their fresh state, they are purple in color, but they become darker during their drying. They are priced and purchased according to size, being graded with a certain number to the pound, just as lemons and oranges are graded with a certain number to the case. In food value they are about equal to dates and figs. They contain very little acid, but are characterized by a large quantity of easily digested sugar. They also have a laxative quality that makes them valuable in the diet.

128. STEWED PRUNES.--A simple way in which to prepare prunes is to stew them and then add sugar to sweeten them. Stewed prunes may be served as a sauce with cake of some kind or they may be used as a breakfast fruit.

STEWED PRUNES
(Sufficient to Serve Six)

1 lb. prunes
1 c. sugar

Look the prunes over carefully, wash them thoroughly in hot water, and soak them in warm water for about 6 hours. Place them on the stove in the same water in which they were soaked and which should well cover them. Cook slowly until they can be easily pierced with a fork or until the seeds separate from the pulp upon being crushed. Add the sugar, continue to cook until it is completely dissolved, and then remove from the stove and cool. If desired, more sweetening may be used or a few slices of lemon or a small amount of lemon peel may be added to give an agreeable flavor.

129. STUFFED PRUNES.--After prunes have been stewed, they may have the seeds removed and then be filled with peanut butter. Stuffed in this way and served with whipped cream, as shown in Fig. 21, or merely the prune juice, they make an excellent dessert.

[Illustration: FIG. 21, Stewed prunes stuffed with peanut butter.]

Select prunes of good size and stew them according to the directions just given, but remove them from the fire before they have become very soft. Cool and then cut a slit in each one and remove the seed. Fill the cavity with peanut butter and press together again. Serve with some of the prune juice or with whipped cream.

130. PRUNE WHIP.--A very dainty prune dessert can be made from stewed prunes by reducing the prunes to a pulp and then adding the whites of eggs. Directions for this dessert follow:

PRUNE WHIP
(Sufficient to Serve Six)

1 c. prune pulp
1/4 c. powdered sugar
2 egg whites
Whipped cream

Make the prune pulp by removing the seeds from stewed prunes and forcing the prunes through a sieve or a ricer. Mix the powdered sugar with the pulp. Beat the whites of the eggs until they are stiff and then carefully fold them into the prune pulp. Chill and serve with whipped cream.

RAISINS

131. RAISINS are the dried fruit of various kinds of grapes that contain considerable sugar and are cured in the sun or in an oven. They come principally from the Mediterranean region and from California. They have an extensive use in cookery, both as a confection and an ingredient in cakes, puddings, and pastry. In food value, raisins are very high and contain sugar in the form of glucose; however, their skins are coarse

cellulose and for this reason are likely to be injurious to children if taken in too large quantities. They are also valuable as a laxative and in adding variety to the diet if they are well cooked before they are served.

Like other dried fruits, raisins should be washed thoroughly before they are used. They may then be soaked in warm water and stewed in exactly the same way as prunes. Sugar may or may not be added, as desired. Sultana raisins, which are the seedless variety, are especially desirable for stewing, although they may be used for any of the other purposes for which raisins are used.

DRIED APPLES, APRICOTS, AND PEACHES

132. Apples, apricots, and peaches are fruits that are used extensively in their dried form. They enable the housewife to supply her family with fruit during seasons when it is impossible to obtain fresh fruit. They may also be used to take the place of canned fruit, especially when the supply is low or has been exhausted. Besides their use as a sauce, they may be used for pies and various desserts.

133. These fruits, which may all be used in just the same way, should be soaked before stewing and should be stewed according to the directions for the preparation and cooking of prunes. Then sufficient sugar to make them sweet should be added. If they are desired for sauce, they may be used without any further preparation. However, they may be substituted for fresh fruit in recipes that call for any of them or for prunes. For instance, dried apricots, after being stewed, may be passed through a sieve to make a purØe and may then be used to make apricot whip or soufflØ according to the directions given for other similar desserts. The flavor of apricots is very strong and a small amount of the pulp will flavor a large quantity of ice cream, sherbet, or water ice.

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FRUIT AND FRUIT DESSERTS

EXAMINATION QUESTIONS

(1) To what are the flavors and odors of fruits chiefly due?

(2) What food substances are found in only very small amounts in fruits?

(3) Mention the kinds of carbohydrate to which the food value of fruits is chiefly due.

(4) What parts of fruits make up the cellulose they contain?

(5) Discuss the value of minerals in fruits.

(6) Of what value in cookery are fruits containing large quantities of acid?

(7) What qualities of fruits are affected as they ripen?

(8) Discuss the digestibility of fruits.

(9) What are the effects of cooking on fruit?

(10) What sanitary precautions concerning fruits should be observed?

(11) (_a_) How do weather conditions affect the quality of berries? (_b_) What is the most important use of berries in cookery?

(12) Name some varieties of apples that can be purchased in your locality that are best for: (_a_) cookery; (_b_) eating.

(13) How can peach juice be utilized to advantage?

(14) Mention the citrus fruits.

(15) Describe a method of preparing grapefruit for the table.

(16) Describe the preparation of oranges for salads and desserts.

(17) Describe the appearance of bananas in the best condition for serving.

(18) (_a_) Give a test for the ripeness of pineapples. (_b_) Describe the most convenient method of preparing pineapples.

(19) Discuss the use of fruit cocktails.

(20) Describe the general preparation of dried fruits that are to be stewed.

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CANNING AND DRYING

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NECESSITY FOR PRESERVING FOODS

1. The various methods of preserving perishable foods in the home for winter use originated because of necessity. In localities where the seasons for fruits and vegetables are short, the available supply in early times was limited to its particular season. Then foods had to be preserved in some way to provide for the season of scarcity. It was not possible, as it is now, to obtain foods in all parts of the country from localities that produce abundantly or have long seasons, because there were no means of rapid transportation, no cold storage, nor no commercial canning industries.

2. In the small towns and farming communities, the first preservation methods for meats, as well as for fruits and vegetables, were pickling, curing, drying, and preserving. Not until later was canning known. It was this preserving of foodstuffs in the home that led to the manufacture and commercial canning of many kinds of edible materials. These industries, however, are of comparatively recent origin, the first canning of foods commercially having been done in France about a hundred years ago. At that time glass jars were utilized, but it was not until tin cans came into use later in England that commercial canning met with much favor.

3. Both canning in the home and commercial canning have had many drawbacks, chief among which was spoiling. It was believed that the spoiling of canned foods was due to the presence of air in the jars or cans, and it is only within the last 50 years that the true cause of spoiling, namely, the presence of bacteria, has been understood. Since that time methods of canning that are much more successful have been originated, and the present methods are the result of the study of bacteria and their functions in nature. It is now definitely known that on this knowledge depends the success of the various canning methods.

4. Since commercial canning provides nearly every kind of foodstuff, and since cold storage and rapid transportation make it possible to supply almost every locality with foods that are out of season, it has not been deemed so necessary to preserve foods in the home. Nevertheless, the present day brings forth a new problem and a new attitude toward the home preservation of foods. There are three distinct reasons why foods should be preserved in the home. The first is to bring about _economy_. If fruits, vegetables, and other foods can be procured at a price that will make it possible to preserve them in the home at a lower cost than that of the same foods prepared commercially, it will pay from an economical standpoint. The second is to promote _conservation_; that is, to prevent the wasting of food. When fruits and vegetables are plentiful, the supply is often greater than the demand for immediate consumption. Then, unless the surplus food is preserved in some way for later use, there will be a serious loss of food material. The third is to produce _quality_. If the home-canned product can be made superior to that commercially preserved, then, even at an equal or a slightly higher cost, it will pay to preserve food in the home.

5. Of the methods of preserving perishable foods, only two, namely, canning and drying, are considered in this Section. Before satisfactory methods of canning came into use, drying was a common method of preserving both fruits and vegetables, and while it has fallen into disuse to a great extent in the home, much may be said for its value. Drying consists merely in evaporating the water contained in the food, and, with the exception of keeping it dry and protected from vermin, no care need be given to the food in storage. In the preparation of dried food for the table, it is transformed into its original composition by the addition of water, in which it is usually soaked and then cooked.

The drying of food is simple, and no elaborate equipment is required for

carrying out the process. Dried food requires less space and care in storage than food preserved in any other way, and both paper and cloth containers may be used in storing it. When storage space is limited, or when there is a very large quantity of some such food as apples or string beans that cannot be used or canned at once, it is advisable to dry at least a part of them. When used in combination with canning, drying offers an excellent means of preserving foods and thus adding to their variety.

6. Canning has a greater range of possibilities than drying. A larger number of foods can be preserved in this way, and, besides, the foods require very little preparation, in some cases none at all, when they are removed from the cans. Practically every food that may be desired for use at some future time may be canned and kept if the process is carried out properly. These include the perishable vegetables and fruits of the summer season, as well as any winter vegetables that are not likely to keep in the usual way or that are gathered while they are immature.

Many ready-to-serve dishes may be made up when the ingredients are the most plentiful and canned to keep them for the time when they are difficult or impossible to obtain otherwise. Such foods are very convenient in any emergency. Often, too, when something is being cooked for the table, an extra supply may be made with no greater use of fuel and very little extra labor, and if the excess is canned it will save labor and fuel for another day. In the same way, left-over foods from the table may be preserved by reheating and canning them. Many foods and combinations of foods may be made ready for pies and desserts and then canned, it being often possible to use fruits that are inferior in appearance for such purposes.

Soup may be canned. It may be made especially for canning, or it may be made in larger quantity than is required for a meal and the surplus canned. For canning, it is an excellent plan to make soup more concentrated than that which would be served immediately, as such soup will require fewer jars and will keep better. Water or milk or the liquid from cooked vegetables or cereals may be added to dilute it when it is to be served.

Meat and fish also may be canned, and many times it is advisable to do this, especially in the case of varieties that cannot be preserved to advantage by such methods as salting, pickling, or curing.

7. The preservation of foods by canning and drying should not be looked at as an old-fashioned idea; rather, it is a matter in which the housewife should be vitally interested. In fact, it is the duty of every housewife to learn all she can about the best methods to employ. Canning methods have been greatly improved within the last few years, and it is a wise plan to adopt the newer methods and follow directions closely. Especially should this be done if foods canned by the older methods have spoiled or if mold has formed on top of the food in the jars.

In order to preserve foods successfully and with ease, the housewife

should realize the importance of carrying out details with precision and care. The exactness with which the ingredients are measured, the choice and care of utensils, the selection and preparation of the food to be canned--all have a direct bearing on whether her results will be successful or not.

By observing such points and exercising a little ingenuity, the economical housewife may provide both a supply and a convenient variety of practical foods for winter use. For example, one single fruit or vegetable may be preserved in a number of ways. Thus, if there is a very large supply of apples that will not keep, some may be canned in large pieces, some may be put through a sieve, seasoned differently, and canned as apple sauce, and some may be cut into small pieces and canned for use in making pies. Apple butter and various kinds of jams and marmalades may be made of all or part apples, or the apples may be spiced and used as a relish. Combining fruits of different flavor in canning also adds variety. In fact, neither quinces nor apples canned alone are so delicious as the two properly combined and canned together.

In the same way, if the housewife will watch the markets closely and make good use of materials at hand, she may provide canned foods at comparatively little cost. Of course, the woman who has a garden of her own has a decided advantage over the one who must depend on the market for foods to can. The woman with access to a garden may can foods as soon as they have been gathered, and for this reason she runs less risk of losing them after they have been canned. Nevertheless, as has been pointed out, it is really the duty of every housewife to preserve food in the home for the use of her family.

* * * * *

CANNING

PRINCIPLES OF CANNING

8. CANNING consists in sealing foods in receptacles, such as cans or jars, in such a way that they will remain sterile for an indefinite period of time. Several methods of canning are in use, and the one to adopt will depend considerably on personal preference and the money that can be expended for the equipment. In any case, successful results in canning depend on the care that is given to every detail that enters into the work. This means, then, that from the selection of the food to be canned to the final operation in canning not one thing that has to do with good results should be overlooked.

9. SELECTION OF FOOD FOR CANNING.--A careful selection of the food that is to be canned is of great importance. If it is in good condition at the time of canning, it is much more likely to remain good when canned than food that is not. The flavor of the finished product also depends a great deal on the condition of the food. Fruits have the best flavor when they are ripe, but they are in the best condition for canning just before they have completely ripened. Immediately following perfect ripeness comes the spoiling stage, and if fruits, as well as vegetables,

are canned before they are completely ripe, they are, of course, farther from the conditions that tend to spoil them. This, however, does not mean that green fruits or vegetables should be canned.

Whenever possible, any food that is to be canned should be perfectly fresh. The sooner it is canned after it has been gathered, the more satisfactory will be the results. For instance, it is better to can it 12 hours after gathering than 24 hours, but to can it 2 hours after is much better. Fruits, such as berries, that are especially perishable should not be allowed to stand overnight if this can be prevented; and it is absolutely necessary to can some vegetables, such as peas, beans, and corn, within a very few hours after gathering. Unless this is done, they will develop a bad flavor because of _flat sour_, a condition that results from the action of certain bacteria. Imperfect fruits should not be canned, but should be used for making jam, marmalade, or jelly.

10. WHY CANNED FOODS SPOIL.--Canned foods spoil because of the action of micro-organisms that cause fermentation, putrefaction, and molding. The reasons for the spoiling of food are thoroughly discussed in _Essentials of Cookery_, Part 2, and in that discussion canning is mentioned as one of the means of preserving food or preventing it from spoiling. However, when canning does not prove effective, it is because undesirable bacteria are present in the food. Either they have not been destroyed by the canning process or they have been allowed to enter before the jar was closed, and have then developed to such an extent as to cause the food to spoil. Odors, flavors, and gases result from the putrefaction, fermentation, or molding caused by these bacteria, and these make the foods offensive or harmful, or perhaps both.

11. PREVENTING CANNED FOODS FROM SPOILING.--From what has just been said, it will be seen that the success of canning depends entirely on destroying harmful micro-organisms that are present in the food and preventing those present in the air from entering the jars in which the food is placed.

Some foods are more difficult to keep than others, because bacteria act on them more readily and the foods themselves contain nothing that prevents their growth. Among such foods are meat, fish, peas, corn, beans, and meat soups. On the other hand, some foods contain acids that prevent the growth of bacteria, and these keep easily. Among these are rhubarb, cranberries, and green gooseberries. However, foods that keep easily are few, and in most cases extreme care in the process of canning must be exercised.

12. While warmth is necessary for bacterial growth, very high temperatures will destroy or retard it. In canning, a temperature as high as 212 degrees Fahrenheit, or boiling point, retards the growth of active bacteria, but retarding their growth is not sufficient. They must be rendered inactive. To do this requires either a higher temperature than boiling point or long continued cooking at 212 degrees. _Spores_ are a protective form that many kinds of bacteria assume under unfavorable conditions. They are very difficult to kill, and unless they are completely destroyed in the canning process, they will develop into

active bacteria when conditions again become favorable. The result of the spore development is the spoiling of the food.

13. Other things besides the application of heat assist in the keeping of canned food, as, for example, the acids of the fruits and vegetables themselves, as has been mentioned. The use of sugar also assists; the greater the quantity of sugar in solution the easier it will be to keep the food. This is proved in the case of jams and jellies, which will keep without being sealed tight or put into jars immediately after cooking. Salt helps to keep vegetables that are canned, and, in making butters, conserves, and pickles, the spices and vinegars used help to protect the foods from bacterial action. However, none of these things are essential to the keeping of any _sterile food_, by which is meant food in which all bacteria or sources of bacteria have been rendered inactive by the application of sufficient heat.

14. CANNING PRESERVATIVES.--Numerous compounds, usually in the form of powders, are advertised as being useful for keeping canned foods from spoiling. None of them should be used, however, because they are unnecessary. If the work of canning is carefully and effectively done, good foods will keep perfectly without the addition of a preservative. The pure-food laws of the United States and of many of the states themselves forbid the use of some preservatives because of their harmful effect on the human system. For this reason, to say nothing of the extra expense that would be incurred in their use, such preservatives may well be left alone.

GENERAL EQUIPMENT FOR CANNING

15. The equipment required for canning depends on two things: the quantity of food to be canned at one time and, since there are several canning methods in use, the canning method that is to be employed.

Various kinds of elaborate equipment have been devised to make the work of canning easy as well as effective. However, it is possible to do excellent work with simple equipment, and if the matter of expense must be considered there should be no hesitation about choosing the simplest and least expensive and doing the work in the best possible way with it. It is important also that utensils already included in the household equipment be improvised to meet the needs of the canning season as far as possible.

16. Whatever the canning method that is to be followed may be, there are a number of utensils and containers that go to make up the general equipment that is required. Familiarity with such an equipment is extremely necessary for correct results in canning, and for this reason the general equipment is discussed here in detail. The special equipment needed for each of the canning methods, however, is not taken up until the method is considered. In giving this general equipment, mention is made of some utensils that are convenient but not absolutely necessary. Any unnecessary, but convenient, part of a canning equipment should therefore be chosen with a view to its labor-saving qualities and its

expense. A device that will make the keeping of canned foods more certain and prevent loss may be a valuable purchase; still, that which makes for greater convenience, but not absolute saving, need not be considered a necessity.

17. VESSELS FOR CANNING.--The pots, kettles, and pans in ordinary use in the kitchen for cooking purposes are usually satisfactory for the canning of foods. Those made of tin or iron, however, are not so good as enameled ones or those made of other metals, such as aluminum. Especially is this true of utensils used for the canning of acid fruits or vegetables, because, if such food remains in contact with tin or iron for more than a few minutes, the acid will corrode the surface sufficiently to give the food a bad or metallic taste. In addition, such utensils often give the food a dark color. If enameled kettles are used for the cooking of foods that are to be canned, it is important that the surface be perfectly smooth and unbroken. Otherwise, it will be difficult to prevent burning; besides, chips of the enamel are liable to get into the food. Kettles for the cooking of fruits with sirup should be flat and have a broad surface. Fruit is not so likely to crush in such kettles as in kettles that are deep and have a small surface.

18. KNIVES, SPOONS AND OTHER SMALL UTENSILS.--Many of the small utensils in a kitchen equipment are practically indispensable for canning purposes. Thus, for paring fruits and vegetables and cutting out cores, blossoms, and stem ends or any defective spots, nothing is more satisfactory than a sharp paring knife with a good point. For paring acid fruits, though, a plated knife is not so likely to cause discoloring as a common steel knife. There are, however, other useful implements for special work, such as the _strawberry huller_, Fig. 1, for removing the stems of strawberries, and the _peach pitter_, Fig. 2, for removing the stones from clingstone peaches. For placing the food to be canned into jars, both forks and large spoons are necessities. A large spoon with holes or slits in the bowl is convenient for picking fruits and vegetables out of a kettle when no liquid is desired, as well as for skimming a kettle of fruit. For packing foods into jars, a long-handled spoon with a small bowl is convenient. Still another useful small utensil is a short, wide funnel that may be inserted into the mouth of a jar and thus permit the food to be dipped or poured into it without being spilled.

[Illustration: FIG. 1]

19. DEVICES FOR MEASURING.--Accurate measures are necessary in canning; in fact, some of the work cannot be done satisfactorily without them. A half-pint measuring cup and a quart measure with the cups marked on it are very satisfactory for making all measures.

Scales are often convenient, too. For measuring dry materials, they are always more accurate than measures. Many canning proportions and recipes call for the measurement of the ingredients by weight rather than by measure. When this is the case and a pair of scales is not convenient, it is almost impossible to be certain that the proportions are correct. For instance, if a recipe calls for a pound of sugar and an equal amount

of fruit, a measuring cup will in no way indicate the correct quantity.

20. COLANDER AND WIRE STRAINER.--For the cleansing of fruits and vegetables that are to be canned, a colander is of great assistance; also, if a large wire strainer is purchased, it may be used as a sieve and for scalding and blanching, steps in canning that are explained later.

[Illustration: FIG. 2]

21. GLASS JARS.--For household canning, the most acceptable containers for food are glass jars that may be closed air-tight with jar rubbers and tops. Use is sometimes made of bottles, jars, and cans of various kinds that happen to be at hand, but never should they be employed unless they can be fitted with covers and made positively air-tight. Like utensils, the glass jars that are a part of the household supply should be used from year to year, if possible, but not at the loss of material. Such loss, however, will depend on the proper sealing of the jars, provided everything up to that point has been correctly done. All jars should be carefully inspected before they are used, because imperfect or broken edges are often responsible for the spoiling of food.

In purchasing glass jars, only what are known as _first quality_ should be selected. Cheap jars are likely to be seconds and will not prove so satisfactory. Glass jars may be purchased in sizes that hold from 1/2 pint to 2 quarts. If possible, food should be canned in the size of jar that best suits the number of persons to be served.

If the family consists of two, pint jars will hold even more than may be used at one time, while if the family is large the contents of a quart jar may not be sufficient.

[Illustration: FIG. 3]

22. Numerous types of glass jars are to be had. Some of them are more convenient than others and may be made air-tight more easily. These two features are the most important to consider in making a selection. Jars that close with difficulty, especially if the tops screw on, are not likely to keep food successfully because the bacteria in the air will have a chance to enter and thus cause the food to spoil.

Glass jars used for canning foods have improved with canning methods. The old-style jars had a groove into which the cover fit, and melted sealing wax or rosin was poured into the space surrounding the cover. Later came the screw-top jar shown in Fig. 3. This type of jar has been extensively used with excellent results. Both the mouth of this jar and the jar top, which is made of metal, usually zinc, lined with glass or porcelain, have threads that match, and the jar is sealed by placing the jar rubber over the top, or ridge, of the jar and then screwing the jar top firmly in place. Such jars, however, are more difficult to make air-tight than some of the newer types. One of these jars is illustrated in Fig. 4. It is provided with a glass cover that fits on the ridge of

the jar and a metal clasp that serves to hold the cover in place and to make the jar air-tight after a rubber is placed in position. Another convenient and simple type of glass jar, known as the _automatic seal top_, has a metal cover with a rubber attached.

Another improvement in jars is that the opening has been enlarged so that large fruits and vegetables, such as peaches, tomatoes, etc., can be packed into them whole. With such wide-mouthed jars, it is easier to pack the contents in an orderly manner and thus improve the appearance of the product. Besides, it is a simpler matter to clean such a jar than one that has a small opening.

[Illustration: FIG. 4]

23. JAR TOPS AND COVERS.--While the tops, or covers, for glass jars are made of both metal and glass, as has been stated, the glass tops meet with most favor. Of course, they are breakable, but they are even more durable than metal tops, which are usually rendered less effective by the bending they undergo when they are removed from the jar. Covers made of zinc are being rapidly abandoned, and it has been proved that the fewer the grooves and the simpler the cover, the more carefully and successfully can it be cleaned. For safety, glass tops that have become chipped or nicked on the edges that fit the jar should be replaced by perfect ones. The covers for automatic-seal jars must be pierced before they can be removed, and this necessitates a new supply for each canning. If there is any question about the first-class condition of jar covers, whether of metal or glass, tops that are perfect should be provided.

24. JAR RUBBERS.--Jar rubbers are required with jar tops to seal jars air-tight. Before they are used, they should be tested in the manner shown in Fig. 5. Good jar rubbers will return to their original shape after being stretched. Such rubbers should be rather soft and elastic, and they should fit the jars perfectly and lie down flat when adjusted. A new supply of rubbers should be purchased each canning season, because rubber deteriorates as it grows old. Rubbers of good quality will stand boiling for 5 hours without being affected, but when they have become stiff and hard from age it is sometimes impossible to make jars air-tight. Occasionally, two old rubbers that are comparatively soft may be used in place of a new one, and sometimes old rubbers are dipped in paraffin and then used. However, if there is any difficulty in sealing jars properly with rubbers so treated, they should be discarded and good ones used.

25. TIN CANS.--For household canning, tin cans are not so convenient as glass jars, but in spite of this they are coming into extensive use. The kind that may be used without any special equipment has a tin lid that fits into a groove and is fastened in place with rosin or sealing wax. Some cans, however, require that the lids be soldered in place. While soldering requires special equipment, this method of making the cans air-tight is the best, and it is employed where considerable canning is done, as by canning clubs or commercial canners.

[Illustration: FIG. 5]

In the purchase of tin cans, the size of the opening should receive consideration. If large fruits and vegetables, such as peaches, pears, and tomatoes, are to be canned, the opening must be a large one; whereas, if peas, beans, corn, and other small vegetables or fruits are to be canned, cans having a smaller opening may be chosen. When acid fruits or vegetables are to be canned, use should be made of cans that are coated with shellac, as this covering on the inside of the cans prevents any action of the acid on the tin.

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CANNING METHODS

GENERAL DISCUSSION

26. The methods employed for the canning of foods include the _open-kettle method_, the _cold-pack method_, the _steam-pressure method_, and the _oven method_. Of these, the open-kettle method is perhaps the oldest household method of canning, and it is still used by many housewives. The other methods, which are newer, seem troublesome to the housewife who is familiar with the open-kettle method, yet it will only be fair to give the new methods a trial before deciding which to use. The one-period cold-pack method has much to recommend it. Foods canned in this way undergo less change in form and flavor than those canned by the open-kettle method; besides, there is less danger of spoiling. In fact, many foods, such as vegetables and meats, that cannot be canned satisfactorily by the open-kettle method will keep perfectly if they are carefully preserved by the one-period cold-pack method. The steam-pressure method requires the use of special equipment, as is explained later. While it is a very acceptable canning method, it is not accessible in many homes. The oven method is liked by many housewives, but it offers almost the same chance for contamination as does the open-kettle method.

OPEN-KETTLE METHOD

27. The OPEN-KETTLE METHOD of canning is very simple and requires no equipment other than that to be found in every kitchen. It consists in thoroughly cooking the food that is to be canned, transferring it to containers, and sealing them immediately.

28. UTENSILS REQUIRED.--Not many utensils are required for the open-kettle canning method. For cooking the food, a large enamel or metal vessel other than tin or iron should be provided. It should be broad and shallow, rather than deep, especially for fruit, as this food retains its shape better if it is cooked in a layer that is not deep. The other utensils for canning fruits and vegetables by this method are practically the same as those already discussed--measuring utensils, a knife, large spoons, pans for sterilizing jars or cans, covers, rubbers, and jars or cans into which to put the food.

29. PROCEDURE.--The first step in the open-kettle canning method consists in sterilizing the containers. To do this, first clean the jars, covers, and rubbers by washing them and then boiling them in clear water for 15 to 20 minutes.

Next, attention should be given to the food that is to be canned. Look it over carefully, cut out any decayed portions, and wash it thoroughly. Sometimes roots, leaves, stems, or seeds are removed before washing, and sometimes this is not done until after washing. At any rate, all dirt or foreign material must be washed from foods before they are ready for canning.

After preparing the food, it must be cooked. If fruit is being canned, put it into the required sirup, the making of which is explained later, and cook it until it is well softened, as if preparing it for immediate table use. If vegetables are being canned, cook them in the same way, but use salt and water instead of sirup. When the food is cooked, transfer it to the sterile jars and seal at once with the sterile rubbers and covers. Then invert each jar to permit the food to cool and to test for leaks.

30. The danger of not securing good results with the open-kettle method lies in the possibility of contaminating the contents before the jar is closed and sealed. In addition to having the jars, rubbers, and covers sterile, therefore, all spoons and other utensils used to handle the cooked food must be sterile. Likewise, the jars must be filled to the top and the covers put on and made as firm and tight as possible at once, so that as few bacteria as possible will enter. If screw-top cans are used, the tops should not be twisted or turned after cooling, as this may affect the sealing. If jars leak upon being turned upside down, the contents must be removed and reheated and the jar must be fitted with another cover. Then both jar and cover must be sterilized and the contents returned and sealed immediately.

COLD-PACK METHOD

31. The COLD-PACK METHOD of canning differs from the open-kettle method in that the food to be canned is not cooked in a kettle before placing it in the jars and sealing them. In this method, the food to be canned is prepared by washing, peeling, scraping, hulling, stemming, seeding, or cutting, depending on the kind. Then it is _scalded_ or _blanched_ and plunged into cold water quickly and taken out immediately, the latter operation being called _cold-dipping_. After this it is placed into hot jars, covered with boiling liquid--boiling water and salt for vegetables, meats, fish, or soups, and boiling sirup for fruits. Then the filled jars are covered loosely and placed in a water bath and _processed_; that is, cooked and sterilized. When food that is being canned is subjected to processing only once, the method is referred to as the _one-period cold-pack method_; but when the food in the jars has not been blanched and cold-dipped and is processed, allowed to stand 24 hours and then processed again, and this operation repeated, it is

called the _fractional-sterilization method_. The equipment required for the cold-pack canning method and the procedure in performing the work are taken up in detail, so that every point concerning the work may be thoroughly understood.

[Illustration: FIG. 6]

32. UTENSILS REQUIRED.--The utensils required for canning by the cold-pack method are shown assembled in Fig. 6. Chief among them is a _sterilizer_, or boiler, which consists of a large fiat-bottomed vessel fitted with a rack and a tight-fitting cover. A number of such devices are manufactured for canning by the cold-pack method, but it is possible to improvise one in the home. A wash boiler, a large pail, a large lard can, or, in fact, any large vessel with a flat bottom into which is fitted a rack of some kind to keep the jars 3/4 inch above the bottom can be used. Several layers of wire netting cut to correct size and fastened at each end to a 3/4-inch strip of wood will do very well for a rack. In any event, the vessel must be deep enough to allow the water to cover the jars completely and must have a tight-fitting cover. Besides a sterilizer, there are needed three large vessels, one for scalding the food that is to be canned, one for cold-dipping, and one for keeping the jars hot. To hold the food that is to be dipped, a sieve, a wire basket, also shown in Fig. 6, or a large square of cheesecloth must also be provided, and for placing jars in the water bath, a can lifter, a type of which is shown on the table in Fig. 6, may be needed. The remainder of the equipment is practically the same as that described under the heading General Equipment for Canning.

PROCEDURE IN THE ONE-PERIOD COLD-PACK METHOD

33. PREPARING THE CONTAINERS.--The first step in the cold-pack method consists in preparing the containers for the food. The jars, rubbers, and covers, however, do not have to be sterilized as in the open-kettle method. But it is necessary first to test and cleanse the jars and then to keep them hot, so that later, when they are filled and ready to be placed in the water bath, they will not crack by coming in contact with boiling water. The best way in which to keep the jars hot is to let them stand in hot water.

[Illustration: FIG. 7]

34. PREPARATION OF THE FOOD.--Attention should next be directed to the preparation of the food to be canned; that is, clean it and have it ready for the processes that follow. The fruits or vegetables may be canned whole or in pieces of any desirable size. What to do with them is explained later, when the directions for canning the different kinds are discussed. While the food is undergoing preparation, fill the sterilizer with hot water and allow it to come to the boiling point.

35. SCALDING AND BLANCHING.--When the food is made ready, the next step is to scald or blanch it. Scalding is done to loosen the skin of such food as peaches, plums, and tomatoes, so that they may be peeled

easily. To scald such fruits or vegetables, dip them quickly into boiling water and allow them to remain there just long enough to loosen the skin. If they are ripe, the scalding must be done quickly; otherwise they will become soft. They should never be allowed to remain in the water after the skin begins to loosen. For scalding fruits and vegetables a wire basket or a square of cheesecloth may be used in the manner shown in Figs. 7 and 8.

Blanching is done to reduce the bulk of such foods as spinach and other greens, to render them partly sterilized, and to improve their flavor. It consists in dipping the food into boiling water or suspending it over live steam and allowing it to remain there for a longer period of time than is necessary for scalding. To blanch food, place it in a wire basket, a sieve, or a piece of clean cheesecloth and lower it into boiling water or suspend it above the water in a closely covered vessel. Allow it to remain there long enough to accomplish the purpose intended.

[Illustration: FIG. 8]

36. COLD DIPPING.--After the food to be canned is scalded or blanched, it is ready for cold-dipping. Cold-dipping is done partly to improve the color of the food. It stops the softening process at once, makes the food more firm and thus easier to handle, and helps to loosen the skin of foods that have been scalded. It also assists in destroying bacteria by suddenly shocking the spores after the application of heat. Cold-dipping, in conjunction with blanching or scalding, replaces the long process of fractional sterilization, and is what makes the one-period cold-pack method superior to this other process. To cold-dip food, simply plunge that which has just been scalded or blanched into cold water, as in Fig. 9, and then take it out at once.

37. PACKING THE JARS.--Packing the jars immediately follows cold-dipping, and it is work that should be done as rapidly as possible. Remove the jars from the hot water as they are needed and fill each with the cold-dipped fruit or vegetable. Pack the jars in an orderly manner and as solidly as possible with the aid of a spoon, as in Fig. 10. Just this little attention to detail not only will help to improve the appearance of the canned fruit, but will make it possible to put more food in the jars.

[Illustration: FIG. 9]

When a jar is filled, pour into it whatever liquid is to be used, as in Fig. 11. As has been stated, hot sirup is added for fruits and boiling water and salt for vegetables. However, when fruit is to be canned without sugar, only water is added. With tomatoes and some greens, no liquid need be used, because they contain a sufficient amount in themselves.

[Illustration: FIG. 10]

38. PREPARATION FOR THE WATER BATH.--As the jars are filled, they must be prepared for the water bath. Therefore, proceed to place the rubber

and cover on the jar. Adjust the rubber, as shown in Fig. 12, so that it will be flat in place. Then put the cover, or lid, on as in Fig. 13, but do not tighten it. The cover must be loose enough to allow steam to escape during the boiling in the water bath and thus prevent the jar from bursting. If the cover screws on, as in the jar at the left, do not screw it down tight; merely turn it lightly until it stops without pressure being put upon it. If glass covers that fasten in place with the aid of a clamp are to be used, as in the jar at the right, simply push the wire over the cover and allow the clamp at the side to remain up. Jars of food so prepared are ready for processing.

[Illustration: FIG 11]

[Illustration: FIG. 12]

39. PROCESSING.--The purpose of the water bath is to _process_ the food contained in the jars before they are thoroughly sealed. Therefore, when the jars are filled, proceed to place them in the water bath. The water, which was placed in the sterilizer during the preparation of the food, should be boiling, and there should be enough to come 2 inches over the tops of the jars when they are placed in this large vessel. In putting the jars of food into the sterilizer, place them upright and allow them to rest on the rack in the bottom. If the filled jars have cooled, they should be warmed before placing them in the sterilizer by putting them in hot water. On account of the boiling water, the jars should be handled with a jar lifter, as in Fig. 14. However, if the sterilizer is provided with a perforated part like that in Fig. 15, all the jars may be placed in it and then lowered in place.

[Illustration: FIG. 13]

When the jars are in place, put the tight-fitting cover on the sterilizer and allow the water to boil and thus cook and sterilize the food in the jars. The length of time for boiling varies with the kind of food and is given later with the directions for canning different foods. The boiling time should be counted from the instant the water in the sterilizer begins to bubble violently. A good plan to follow, provided an alarm clock is at hand, it to set it at this time, so that it will go off when the jars are to be removed from the sterilizer.

[Illustration: FIG. 14]

[Illustration: FIG. 15]

40. SEALING THE JARS.--After processing the food in this manner, the jars must be completely sealed. Therefore, after the boiling has continued for the required length of time, remove the jars from the water with the aid of the jar lifter or the tray and seal them at once by clamping or screwing the covers, or lids, in place, as in Fig. 16. Sometimes, the food inside the jars shrinks so much in this process that the jars are not full when they are ready to be sealed. This is illustrated in Fig. 17. Such shrinkage is usually the result of insufficient blanching, or poor packing or both. However, it will not

prevent the food from keeping perfectly. Therefore, the covers of such jars of food must not be removed and the jars refilled; rather, seal the jars tight immediately, just as if the food entirely filled them. If, in sealing jars removed from the water bath, it is found that a rubber has worked loose, shove it back carefully with the point of a clean knife, but do not remove the cover.

[Illustration: FIG. 15]

As the jars are sealed, place them on their sides or stand them upside down, as in Fig. 18, to test for leaks, in a place where a draft will not strike them and cause them to break. If a leak is found in any jar, a new rubber and cover must be provided and the food then reprocessed for a few minutes. This may seem to be a great inconvenience, but it is the only way in which to be certain that the food will not be wasted by spoiling.

[Illustration: FIG. 17]

[Illustration: FIG. 18]

[Illustration: FIG. 19]

41. WRAPPING AND LABELING.--When the jars of food have stood long enough to cool, usually overnight, they are ready for wrapping and labeling. Wrapping is advisable for practically all foods that are canned, so as to prevent bleaching, and, of course, labeling is necessary when canned food is wrapped, so as to enable it to be distinguished readily when it is in storage. To wrap canned foods, proceed as in Fig. 19. Use ordinary wrapping paper cut to a size that will be suitable for the jar, and secure it in place with a rubber band, as shown, or by pasting the label over the free edge.

PROCEDURE IN THE FRACTIONAL-STERILIZATION METHOD

42. In canning food by the FRACTIONAL-STERILIZATION CANNING METHOD, the procedure is much the same as in the one-period cold-pack method. In fact, the only difference between the two is that blanching and cold-dipping are omitted, and in their stead the food in the jars is subjected to three periods of cooking. When the jars of food are made ready for processing in the sterilizer, they are put in the water bath, boiled for a short time, and then allowed to cool. After 24 hours, they are again boiled for the same length of time and allowed to cool. After another 24 hours, they are subjected to boiling for a third time. Then the jars of food are removed and sealed as in the one-period cold-pack method. By the fractional-sterilization method, the spores of bacteria contained in the food packed in the jars are given a chance to develop during the 24-hour periods after the first and second cookings, those which become active being destroyed by cooking the second and third times. Although some canners prefer this method to those already mentioned, the majority look on it with disfavor, owing to the length of time it requires.

STEAM-PRESSURE METHODS

43. For canning foods by steam pressure, special equipment is necessary. In one of the steam-pressure methods, what is known as a _water-seal outfit_ is required, and in the other a device called a _pressure cooker_ is employed. The work of getting the containers ready, preparing the food for canning, packing it into the jars, and sealing and testing the jars is practically the same in the steam pressure methods as in the cold-pack methods. The difference lies in the cooking and sterilization of the foods after they are in the jars and partly sealed and in the rapidity with which it may be done.

44. CANNING WITH A WATER-SEAL OUTFIT.--A water-seal outfit, which may be purchased in stores that sell canning supplies, consists of a large metal vessel into which fits a perforated metal basket designed to hold jars of food. This vessel is also provided with a tight-fitting cover having an edge that passes down through the water, which is placed in the bottom of the vessel. When heat is applied to the bottom of the vessel, the water inside of it is changed into steam. The cover prevents the steam from passing out, and it collects in and around the metal basket supporting the jars of food. Enough steam is generated in this outfit to raise the temperature about 4 to 6 degrees above the boiling point. Thus, the water-seal outfit will cook the food in the cans in about one-fourth less time than will the water bath of the one-period cold-pack canning method.

[Illustration: FIG. 20]

45. CANNING WITH A PRESSURE COOKER.--For canning by steam pressure, a number of different kinds of pressure cookers are to be had, but in principle they are all alike and they are always made of heavy material, so as to withstand the severe steam pressure generated in them. In Fig. 20 is shown one type of pressure cooker. It is provided with a bail, or handle, for carrying it and with clamps that hold the cover firmly in place. Attached to the cover is a steam gauge, which indicates the steam pressure inside the cooker, and a pet-cock, which is used to regulate the pressure. On some cookers, a thermometer is also attached to the cover. Also, inside of some, resting on the bottom, is an elevated rack for supporting the jars of food that are to be sterilized and cooked. In operating a pressure cooker, water for generating steam is poured in until it reaches the top of this rack, but it should not be allowed to cover any part of the jars of food. Steam is generated by applying heat to the bottom of the cooker, and the longer the heat is applied the higher the steam pressure will go.

It is possible to secure a steam pressure of 5 to 25 pounds per square inch in a cooker of this kind. This means that the temperature reached will vary from a few degrees above boiling to about 275 degrees Fahrenheit. At a pressure of 20 pounds, the temperature will be about 260 degrees. The heavier the material used for a cooker and the more solid the construction, the higher may go the steam pressure, and, of

course, the temperature. Some cookers of light construction will not permit of a pressure greater than 5 pounds, but even such cookers are very satisfactory. It is the high temperature that may be developed in a pressure cooker that greatly shortens the time required for cooking jars of food and making them sterile.

CANNING WITH TIN CANS

46. For canning food in some tin cans, it is necessary to have a soldering outfit for properly closing them. This consists of a capping steel, a tipping iron, solder in small strips and in powder form, a small can of sal ammoniac, and a bottle of flux, which is a fluid that makes solder stick to tin.

47. Prepare the food that is to be canned in tin cans in the same way as for canning in jars by the cold-pack method; likewise, pack the cans in the same way, but allow the liquid and fruit or vegetables to come to within only 1/4 inch of the top. Then proceed to close the cans. Apply the flux to the groove in the top of each can where the solder is to be melted, using for this purpose a small brush or a small stick having a piece of cloth wrapped around one end. Heat the capping steel, which should be thoroughly clean, until it is almost red hot, dip it quickly into a little of the flux, and then put it into a mixture consisting of equal parts of sal ammoniac and powdered solder until it is covered with bright solder. Put the cap on the can and apply the hot capping steel covered with the solder. Hold this device firmly, press it downwards, and turn it slowly as the solder melts and thus joins the cap to the can.

48. After the caps are soldered in place, the air inside the cans must be driven out through the small vent, or opening, usually in the center of the cap, and the cans made air-tight. Therefore, place the cans into boiling water to within 1/2 inch of the top and let them remain there for a few minutes. Usually, 3 minutes in boiling water is sufficient. Immediately after _exhausting_, as this process is called, apply a little of the flux as in capping, and, with the tipping iron well heated and a strip of solder, seal the hole in the caps. After this is done, test each can for leaks by submerging it in water. If bubbles arise, it is an indication that the cover is not tight and must be resoldered.

49. The next step consists in processing the cans of food. This may be done either in a water bath or in a pressure cooker. If the cans are to be processed in a water bath, keep them in the boiling water just as long as glass jars of food would be kept there. If a pressure cooker is to be used, keep the cans in it for 6 to 40 minutes, depending on the steam pressure employed, the ripeness of the food or the necessity for cooking it, and the size of the cans employed. For canning meat or fish, processing in a pressure cooker is the most successful, as the high temperature reached in it kills bacteria, which are difficult to destroy at the boiling point.

As soon as the cans of food are removed from the water bath or the

pressure cooker, plunge them into cold water to stop the cooking and prevent the food from getting soft and mushy. Then label the cans, so that no mistake will be made as to their contents.

50. In another method, the tin cans may be closed without soldering the caps on. The caps used in this case are different from those which must be soldered. They are forced in place by a hand-pressure machine that may be attached to a table. Otherwise the procedure is the same as that just given.

OVEN METHOD

51. The OVEN METHOD oven method of canning is thought to be very satisfactory by many housewives, but, as it is necessary to remove the covers after cooking the contents of the jars, food canned in this way is subjected to contamination, just as in the open-kettle method. In addition, the jars are difficult to handle in the oven, owing to the extreme heat that is required to cook the food in the jars.

52. In canning by the oven method, proceed by preparing the food as for the cold-pack canning method; also, fill the jars with fruit or vegetables and with liquid or sirup as in this method. Put the covers on the jars loosely, omitting the jar rubbers. Place the jars in a shallow pan of water, as in Fig. 21, and set the pan containing the jars into a stove oven, which should be only slightly warm. At the same time place the jar rubbers in a pan of boiling water, so that they may be sterilized as the food cooks. When the jars are in the oven, increase the heat gradually until the food in them boils. Then keep up a temperature that will allow the food to boil quietly for a period long enough to cook it soft and sterilize it. Usually, 30 to 45 minutes after boiling has begun will be sufficient. During the cooking some of the liquid in the jars evaporates. Therefore, when the jars of food are ready to be removed from the oven, have boiling water or sirup ready, remove the cover of each jar in turn, and fill the jar brimful with the liquid. Then place a sterilized rubber in place and fasten the cover down tight. The procedure from this point on is the same as in the other canning methods.

[Illustration: FIG. 21]

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CANNING VEGETABLES AND FRUITS

PREPARATION FOR CANNING

53. In canning, as in all other tasks related to cookery, the housewife’s aim should be to do the greatest amount of work, and do it well, with the least effort on her part. The results she gets in canning, then, will depend considerably on the orderly arrangement of the utensils and materials with which she is to do the work. But of greater importance is the preparation she makes to eliminate as much as

she can the possibilities of contamination, for, as has been repeatedly pointed out, success in canning depends on the absence of dangerous bacteria.

54. From what has just been mentioned, it is essential that everything about the person who is to do the work and the place in which the work is to done should be clean. Clean dresses and aprons should be worn, and the hands and finger nails should be scrupulously clean. The kitchen floor should be scrubbed and the furniture dusted with a damp cloth. Any unnecessary utensils and kitchen equipment should be put out of the way and those required for canning assembled and made ready for the work. The jars should be washed and the covers tested by fitting them on without the rubbers. If a glass cover rocks, it does not fit correctly; and if a screw cover will not screw down tight, it should be discarded. Without the rubber, there should be just enough space between the cover and the jar to permit the thumb nail to be inserted as is shown in Fig. 3. The edge of each jar and each glass cover should be carefully examined every time it is used, so that none with pieces chipped off will be used, as these will admit air. This examination is made by running the finger over the edge of the jar and the cover, as is shown in Fig. 4. The jars, covers, and rubbers should be put into pans of cold water, and the water should be brought to the boiling point and allowed to boil for 15 minutes or more while the fruit or vegetables are being prepared for canning. They should be kept in the hot water until the food is ready to be placed in them. In the one-period cold-pack method, it is not necessary to boil the jars, rubbers, and covers, but this may be done if desired.

To produce good-looking jars of food, the fruit or vegetables to be canned should be graded to some extent; that is, the finest of the fruits or vegetables should be separated and used by themselves, as should also those of medium quality. Often it is wise to use the poorest foods for purposes other than canning. The food may then be canned according to the chosen method, but by no means should methods be mixed. In handling the product after it has been cooked by the open-kettle method, any spoon, funnel, or other utensil must be thoroughly sterilized in the same way as the jars and their covers and rubbers; indeed, no unsterile utensil should ever be allowed to touch the food when a jar is being filled.

[Illustration: FIG. 22]

55. It is by the observance of such precautions as these, some of them seemingly unimportant, that the housewife will be repaid for her efforts in canning and be able to produce canned fruits and vegetables like those shown in color in Fig. 22. This illustration shows, with a few exceptions, such foods canned by the one-period cold-pack method, and merits close inspection. As will be observed, the jars are full and well packed and the color of each food is retained. Each can of food indicates careful work and serves to show the housewife what she may expect if she performs her work under the right conditions and in the right way. This illustration likewise serves to demonstrate that any food may be successfully canned by the one-period cold-pack method, a

claim that cannot be made for the other canning methods. In fact, some of the foods illustrated, as, for instance, peas and corn, cannot be canned successfully by any other method.

DIRECTIONS FOR CANNING VEGETABLES

56. CLASSIFICATION OF VEGETABLES.--To simplify the directions here given for the canning of vegetables, this food is divided into four groups, as follows:

1. _Greens_, which include all wild and cultivated edible greens, such as beet greens, collards, cress, dandelion, endive, horseradish greens, kale, mustard greens, spinach, New Zealand spinach, and Swiss chard.

2. _Pod and related vegetables_, which include asparagus, beans, both string and wax, Brussels sprouts, cabbage, cauliflower, eggplant, okra, peppers, both green and ripe, summer squash, and vegetable marrow.

3. _Root and tuber vegetables_, which include beets, carrots, kohlrabi, parsnips, rutabagas, salsify, sweet potatoes, and turnips.

4. _Special vegetables_, which include beans, both Lima and shell, corn, mushrooms, peas, pumpkin, sauerkraut, squash, succotash and other vegetable combinations, and tomatoes.

The convenience of this plan will be readily seen when it is understood that, with the exception of the special vegetables, the same method of preparation and the time given for the various steps in the canning process apply to all vegetables of the same class. Thus, if directions for a vegetable belonging to a certain class are not definitely stated in the text, it may be taken for granted that this vegetable may be canned in the manner given for another vegetable of the same class.

57. GENERAL DIRECTIONS.--The canning of vegetables may be most successfully done by the one-period cold-pack method. Tomatoes, however, because of the large quantity of acid they contain, may be canned and kept with little difficulty by the open-kettle method, but they will be found to keep their shape better if the cold-pack method is employed.

The time required for cooking any vegetable after it is packed in jars depends on the kind and the age. Therefore, if a vegetable is hard or likely to be tough, it may be necessary to increase the time given in the directions; whereas, if it is young and tender or very ripe, as in the case of tomatoes, the time for cooking may perhaps have to be decreased. Because, in altitudes higher than sea level, the boiling point of water is lower than 212 degrees Fahrenheit, the length of time for boiling foods in the water bath must be increased after an altitude of 500 feet is reached. Therefore, for every additional 500 feet over the first 500 feet, 10 per cent. should be added to the time given for the boiling in water. In case a pressure cooker is used, however, this is not necessary.

The canning directions here given are for 1-quart jars. If pint jars are to be used, decrease the salt proportionately; also, decrease the time for cooking in each case one-fifth of the time, or 20 per cent. If 2-quart jars are to be used, double the amount of salt and add to the length of time for cooking one-fifth, or 20 per cent. For instance, if a 1-quart jar of food requires 90 minutes, a pint jar of the same food would require 72 minutes and a 2-quart jar, 108 minutes.

GROUP 1--GREENS

58. In canning greens, or vegetables belonging to the first group, select those which are fresh and tender. Greens that are old and inclined to be strong and tough may require longer blanching and cooking. Look the greens over carefully, rejecting all leaves that are wilted or otherwise spoiled. Cut off the roots and drop the leaves into a pan of cold water. Wash these thoroughly a number of times, using fresh water each time, in order to remove all sand and dirt that may be clinging to them. Then proceed to blanch them for 10 to 15 minutes in steam, suspending the greens over boiling water in a piece of cheesecloth, a colander, or the top of a steamer. After blanching, dip them quickly into cold water. Then pack the greens tightly into jars and add 1 teaspoonful of salt to each jarful. No water has to be added to greens, because the leaves themselves contain sufficient water. When the jars are thus packed, adjust the covers and proceed to sterilize and cook the greens according to the directions previously given. If the water bath is to be used, boil them in it for 1-1/2 to 2 hours; but if the pressure cooker is to be employed for this purpose, cook them at a 5-pound pressure for 60 minutes or at a 10-pound pressure for 40 minutes.

GROUP 2--POD AND RELATED VEGETABLES

59. The best results in canning vegetables belonging to the second group will be derived when those which are fresh and tender are selected. As has been mentioned, the sooner vegetables are canned after they are taken from the garden, the better will be the canned product. Directions for practically all vegetables included in this group are here given.

60. ASPARAGUS.--Select tender asparagus, and proceed with the canning no later than 5 hours after it has been taken from the garden. Remove the hard portions at the ends of the stems, and cut the trimmed stems into pieces the length of the jars into which they are to be placed. If preferred, however, the asparagus may be cut into small pieces. Wash the cut asparagus thoroughly in cold water, and then sort out the uneven pieces that were cut off in making the stems even in length. These may be canned separately for soup. Lay the stems of asparagus in an orderly pile in a colander or a wire basket, cover it, and place it into a large vessel where it may be kept completely covered with boiling water for 5 minutes. Then cold-dip the asparagus quickly, and pack it neatly into the jars, keeping the tip ends up. Add 1 teaspoonful of salt to each

jarful and pour boiling water into each jar until it is completely full. Adjust the covers and proceed to sterilize and cook the jars of food. Cook for 1-1/2 to 2 hours in the water bath, or, in the pressure cooker, cook for 60 minutes at a pressure of 5 pounds or for 40 minutes at a pressure of 10 pounds.

61. BRUSSELS SPROUTS, CABBAGE, AND CAULIFLOWER.--In canning Brussels sprouts, cabbage, or cauliflower, first prepare each vegetable as if it were to be cooked for the table. When thus made ready, blanch it with the aid of a square of cheesecloth or a colander in live steam, over boiling water, for 10 to 15 minutes. Then cold-dip it and pack it tightly into the jars. Add 1 teaspoonful of salt to each jarful and fill each jar with boiling water. Proceed next to sterilize and cook it according to the method selected. Boil for 90 minutes in the water bath; in the pressure cooker, cook for 60 minutes at a 5-pound pressure or for 40 minutes at a 10-pound pressure.

62. EGGPLANT AND SUMMER SQUASH.--Both eggplant and summer squash are canned in the same way, because the consistency of these vegetables is much alike. Select firm vegetables with no decayed spots. Blanch for 3 to 8 minutes in boiling water; cold-dip quickly; remove the skins; cut into pieces of a size that will fit into the jars; pack into the jars; and add 1 teaspoonful of salt to each jarful. Next, adjust the jar lids and proceed according to the directions given for the method selected. In the water bath, boil for 1-1/2 hours; in the pressure cooker, cook for 60 minutes at a pressure of 5 pounds or for 40 minutes at a pressure of 10 pounds. Eggplant or summer squash so canned may be rolled in egg and crumbs and sautØd or fried, the same as fresh vegetables of this kind.

63. OKRA AND GREEN PEPPERS.--Both okra and green peppers may also be canned in the same way. Prepare these vegetables for canning by washing fresh, tender pods of either vegetable thoroughly. Blanch for 5 to 15 minutes in boiling water and cold-dip quickly. Pack the pods into the jars, add a teaspoonful of salt to each jarful, and fill the jars with boiling water. Adjust the lids and proceed according to directions for the method selected. In the water bath, boil for 1-1/2 to 2 hours; in the pressure cooker, cook for 60 minutes at a pressure of 5 pounds or for 40 minutes at a pressure of 10 pounds.

64. STRING BEANS.--String beans of any variety should be canned as soon as they are gathered. If the beans to be canned are not of the stringless variety, prepare them by stringing them, following the directions given in _Vegetables_, Part 1. Stringless beans should be selected if possible, to avoid this part of the work. Cut out any rusted portions, cut each end from the beans, and, if preferred, cut the beans into inch lengths. When thus prepared, blanch them for 10 to 15 minutes in live steam, cold-dip quickly, and pack tightly into the jars. Add a teaspoonful of salt to each jarful, fill the jars with boiling water, adjust the lids, and cook according to the method preferred. In the water bath, boil for 1-1/2 to 2 hours; in the pressure cooker, cook for 60 minutes at a pressure of 5 pounds or for 40 minutes at a pressure of 10 pounds.

GROUP 3--ROOT AND TUBER VEGETABLES

65. Only the small, young, and tender vegetables included in the third group lend themselves readily to canning. As a rule, such vegetables are allowed to mature, when they can be stored for winter use without canning them. However, many housewives like to can some of them for the variety they offer in the preparation and planning of meals.

66. BEETS.--For canning, select small, young beets. Prepare them by cutting off the tops, which may be cooked as greens or canned separately, and all but about an inch of the stems and an inch of the roots. Scrub the trimmed beets well, and then blanch them in boiling water for 5 to 15 minutes or until the skins may be easily scraped off with a knife. Plunge them quickly into cold water and draw them out again. Then scrape off the skins and remove the roots and stems. The roots and stems are left on during the blanching and cold-dipping to prevent them from bleeding, or losing color. When thus prepared, pack the beets into jars, add 1 teaspoonful of salt to each jarful, and fill the jars with boiling water. Then adjust the jar tops and proceed to sterilize and cook the jars of beets according to the directions for any preferred method. In the water bath, cook them for 1-1/2 hours; in the pressure cooker, cook them for 1 hour at a pressure of 5 pounds or for 40 minutes at a pressure of 10 pounds.

67. CARROTS, PARSNIPS, AND TURNIPS.--Young parsnips and turnips are canned in exactly the same way as young carrots. Therefore, directions for the canning of carrots will suffice for all three of these vegetables. Prepare the carrots for canning by cutting off the tops and the roots and scrubbing them well. Blanch them for 10 to 15 minutes in boiling water, so that the skins may be easily removed, and cold-dip them. Then remove the skins by scraping, pack the carrots into the jars, add 1 teaspoonful of salt to each jarful, and fill the jars with boiling water. Adjust the jar tops next, and proceed to sterilize and cook the jars of carrots according to the method selected. In the water bath, cook for 1-1/2 hours; in the pressure cooker, cook for 1 hour at a pressure of 5 pounds or for 40 minutes at a pressure of 10 pounds.

GROUP 4--SPECIAL VEGETABLES

68. Vegetables of the fourth group, which include those which cannot well be classified in the other groups, lend themselves readily to combinations, such as succotash, that make for variety in food. As is true of the other vegetables, special vegetables must be fresh and sound if good results in canning are expected.

69. LIMA AND OTHER SHELLED BEANS.--For canning, only tender beans, whether Lima or some other variety, should be chosen. Prepare them for immediate canning by shelling them--that is, taking them from the pods--blanching them for 5 to 10 minutes in boiling water, and then cold-dipping them quickly. Pack the jars to within 1/2 inch of the top,

add 1 teaspoonful of salt to each jar, and fill the jars with boiling water. Adjust the covers and proceed to sterilize and cook them. In the water bath, boil for 2-1/2 to 3 hours; in the pressure cooker, cook for 1-1/2 hours at a pressure of 5 pounds or for 1 hour at a pressure of 10 pounds.

70. GREEN CORN.--For canning purposes, only corn that is young and milky should be selected. Get it ready for canning by husking it and removing the silk. Then blanch it for 3 to 5 minutes in boiling water and cold-dip it quickly. Cut the kernels half way down to the cob and scrape out what remains after cutting. For best results in this operation, hold the ear of corn so that the butt end is up; then cut from the tip toward the butt, but scrape from the butt toward the tip. Next, pack the jars tightly with the corn, pressing it into them with a wooden masher. Unless two persons can work together, however, cut only enough corn for one jar and fill and partly seal it before cutting more. As corn swells in the cooking, fill each jar to within 1/2 inch of the top. The milk in the corn should fill all spaces between the kernels, provided there are any, but if it does not, boiling water may be poured in. Add 1 teaspoonful of salt to each jarful of corn and adjust the jar lids. Boil for 3 hours in the water bath; but, if the pressure cooker is to be used, cook for 1-1/2 hours at a pressure of 5 pounds or for 1 hour at a pressure of 10 pounds.

Corn on the cob may be canned in the same way if desired, but as only three small ears can be put into a quart jar, this would seem to be a waste of space and labor. If corn on the cob is to be canned, 2-quart jars will prove more convenient than 1-quart jars.

71. PEAS.--Peas for canning should be well formed and tender, and they should be canned as soon as possible after coming from the garden. Proceed by washing the pods and shelling the peas. Blanch the shelled peas for 5 to 10 minutes in live steam, and cold-dip them quickly. Pack the peas into the jars, having them come to within 1/2 inch from the top, add 1 teaspoonful of salt to each jarful, and fill the jars with boiling water. Then adjust the jar lids and proceed according to directions for the method selected. In the water bath, boil for 2 or 3 hours; in the pressure cooker, cook for 1-1/2 hours at a pressure of 5 pounds or for 1 hour at a pressure of 10 pounds.

72. PUMPKIN AND SQUASH.--The canning of pumpkin and squash is advisable when there is any possibility of their not keeping until they can be used. Prepare either of these vegetables for canning by first peeling it and cutting the edible part into inch cubes. Blanch these cubes for 10 to 15 minutes in live steam and cold-dip them quickly. Pack the jars as full as possible, and add 1 teaspoonful of salt to each jar, but no water. After adjusting the jar lids, boil the jars of food for 1-1/2 hours in the water bath, or cook them for 1 hour at a pressure of 5 pounds or for 40 minutes at a pressure of 10 pounds in the pressure cooker. When finished, the jars will be found to be only about half full, but the contents will keep perfectly.

If desired, pumpkin or squash may first be cooked as if preparing it for

use and then put into the jars for processing.

73. SUCCOTASH.--Of course, succotash is not a vegetable, but the name of a food that results from combining corn and beans. These vegetables may be canned together to make for variety in the winter's food supply, or each may be canned separately and combined later. Clean the ears of corn in the manner previously directed; then blanch them for 5 minutes and cold-dip them. Also, remove green Lima beans from the pods, blanch them for 10 minutes, and cold-dip them. Then cut and scrape the corn off the cobs and mix it with an equal quantity of the beans. Pack the mixture into the jars to within 1/2 inch of the top, add a teaspoonful of salt to each jarful, and fill the jars with boiling water. Adjust the jar tops and proceed according to the directions for the process to be employed. In the water bath, boil for 2 hours; in the pressure cooker, cook for 50 minutes at a pressure of 5 pounds or for 35 minutes at a pressure of 10 pounds.

74. TOMATOES.--As has been stated, tomatoes may be canned successfully by the open-kettle method. If this method is to be employed, the first part of the preparation is exactly the same as for the cold-pack method, except that the jars, jar tops, and jar rubbers must be carefully sterilized.

For canning, firm tomatoes should be selected if possible, as they will keep their shape better than those which are very ripe. If some are soft, they should be sorted out and canned for soup making or made into catsup. After washing the tomatoes, proceed to blanch them. The length of time required for blanching depends entirely on the condition of the tomatoes. They should be blanched for 1 to 3 minutes, or just long enough to loosen the skin. After blanching, dip them quickly into cold water and remove the skins. These, it will be found, may be removed easily and quickly. Pack the tomatoes thus prepared tightly into jars and fill them with boiling water, boiling tomato juice, or stewed tomatoes. Add a teaspoonful of salt to each jar. Then adjust the jar lids and proceed according to the directions given for the method selected. Boil for 22 minutes in the water bath; in the pressure cooker, cook for 15 minutes at a pressure of 5 pounds or for 10 minutes at a pressure of 10 pounds.

75. TOMATOES FOR SOUP.--If there are soft tomatoes at hand or if tomatoes are canned by the open-kettle method, quantities of tomato juice will be available. Such material as this may be put through a sieve and boiled down for winter use in the making of soups, bisques, etc. It may be canned simply by pouring the boiling juice into sterilized jars and sealing them immediately.

76. TOMATOES AND CORN.--An excellent food combination results from combining stewed tomatoes with corn. Such a combination may be canned safely by either the open-kettle or the cold-pack method. The acid of the tomatoes helps to keep the corn, but the combination requires longer cooking than just plain tomatoes. Prepare each vegetable as for canning separately, but, if desired, cut the tomatoes into pieces. Mix the two foods in any desirable proportion and, for the cold-pack canning method,

put the food into the jars. Add 1 teaspoonful of salt to each jarful, but no water. Then adjust the jar lids, and proceed to sterilize and cook the jars of food. In the water bath, cook them 1-1/2 hours; in the pressure cooker, cook them for 50 minutes at a pressure of 5 pounds or for 35 minutes at a pressure of 10 pounds.

DIRECTIONS FOR CANNING FRUITS

77. The chief difference between the canning of fruits and the canning of vegetables is that sugar in the form of sirup, instead of salt water, is used for the liquid. Fruits may be canned without sugar if desired, but nothing is gained by so doing, for sugar will have to be added later. Because of the sugar used in canning and the acid contained in the fruit, canned fruit has better keeping qualities than canned vegetables. In fact, it is much more likely to keep well even though it does not receive such careful attention as vegetables. It is for this reason that canned fruit does not require so much time for sterilization as vegetables do. Still it should not be inferred that care is not necessary in the canning of fruits. Indeed, the more care that is taken, the better are the results likely to be.

78. SIRUPS FOR CANNING.--Before the canning of fruits can be undertaken, it is necessary to possess a knowledge of the sirups that are needed. Such sirups consist simply of sugar dissolved in boiling water. The quantity of sugar and water required for a sirup depends on the acidity of the fruit and the purpose for which it is to be used. Plain canned fruits that are to be used for sauces, etc. require less sugar proportionately than those which are preserved, and fruit canned for pie making may have less than either. Thus, fruits of the same kind may be canned with sirups of different proportions. To a great extent, the quantity of sugar to use with fruit may be regulated by the taste, but it will be readily seen that such fruits as sour cherries and plums will require more sugar to make them palatable than pears and blueberries. It will be well to note, though, that the sugar does not penetrate the fruit unless the two are cooked together.

79. In order to make sirup for canning, place the desired quantities of sugar and water in a kettle and proceed to heat them. Stir the liquid while it is heating, in order to assist in dissolving the sugar. When it has begun to boil rapidly, remove the sirup from the fire and use it at once. Do not continue boiling.

In preparing such sirups, it will be well to note that the greater the proportion of sugar to water or the longer the sugar and water are allowed to boil, the denser, or heavier, will the sirup become. It is this _density_ of sirup that regulates its use for the different kinds of fruit and determines its nature. Thus, a sirup in which the proportion of sugar to water is so large as to make the sirup thick is known as a _heavy sirup_; one in which the proportion of water to sugar is so large as to make the sirup thin is called a _light sirup_; and one in which the proportion of sugar and water is such as to produce a sirup that is neither thick nor thin, but stands between the two extremes, is

called a _medium sirup_.

TABLE I

SIRUPS FOR CANNING FRUITS

Sirup No.	Proportions Sugar Cups	Water Cups	Degrees With Hydrometer	Uses
1	2	4	28	Open-kettle canning, or pie fruit canned by any method.
2	2	3	30	Open-kettle canning, or pie fruit canned by any method.
3	2	2	40	Open-kettle canning, or sweet fruits canned by cold-pack methods.
4	2	1-1/2	48	Sweet fruits canned by cold-pack methods.
5	2	1	54	Sour fruits canned by cold-pack methods.
6	2	1/2	68	Very rich fruits canned by cold-pack methods; preserves canned by open-kettle method.

80. The density of sirup is also affected by the amount and rapidity of evaporation that takes place in boiling, and these, in turn, depend on the amount of surface that is exposed. For instance, if a sirup is cooked in a large, flat kettle, the evaporation will be greater and more rapid than if it is cooked in a small, deep vessel. Atmospheric pressure affects the rapidity of evaporation, too. In a high altitude, evaporation takes place more slowly than at sea level, because the boiling point is lower. Thus, in the making of sirups for canning, the first point to be determined is whether the sirup desired should be light, medium, or heavy, and in its preparation the points mentioned must receive consideration.

81. For determining the density of sirup, a _sirup gauge_, or _hydrometer_, will be found useful. This device consists of a graduated glass tube attached to a bulb that is weighted with mercury. The graduations, or marks, on the tube, or top part, of the hydrometer serve to indicate the percentage of solid matter dissolved in a solution and register from to 50 degrees. To use such a gauge, partly fill a glass cylinder--an ordinary drinking glass will do--with the sirup and place the hydrometer in it. The greater the amount of solid matter dissolved

in the sirup, the higher will be hydrometer float. Then read the number of degrees registered by observing the mark that is level with the surface of the sirup.

The number of degrees that the hydrometer should register for sirups of different densities--that is, for sirups consisting of different proportions of sugar and water--are given in Table I. This table, in addition, gives the uses that should be made of such sirups, and each one is numbered so that it may be referred to readily later in the recipes for canning fruits.

82. CLASSIFICATION OF FRUITS.--For the sake of convenience in canning, fruits, too, are here divided into groups. These groups, three in number, together with the fruits included in each, are:

1. _Soft Fruits_, which are subdivided into three kinds, namely, sweet, sour, and very sour. The _sweet soft fruits_ include blackberries, blueberries or huckleberries, sweet cherries, elderberries, ripe gooseberries, mulberries, and black and red raspberries; the _sour soft fruits_, apricots, currants, grapes, peaches, and strawberries; and the _very sour soft fruits_, sour cherries, cranberries, green gooseberries, plums, and rhubarb.

2. _Hard Fruits_, which include apples, quinces, and pears.

3. _Special Fruits_, which include ripe figs, kumquats, loquats, nectarines, persimmons, and pineapples.

The advantage of this classification, as in the case of the vegetable classification, is that, as a rule, all fruits belonging to a group or a subdivision of a group may be canned in the same way and with sirup of practically the same density.

83. CANNING METHODS FOR FRUITS.--The canning of fruits may be done by the several methods previously discussed, but the Cold-pack and open-kettle methods seem to meet with most favor. On account of the sirup used in canning fruit and the acid in the fruit, the open-kettle method is usually fairly successful, whereas, in the canning of vegetables, with the exception of tomatoes, it is not so reliable. The housewife, by experiment, can determine which method will suit her needs best, but by no means should methods be mixed. If a certain method is decided on, it should be adhered to in every detail and carried through without any substitution. For all methods, as has been mentioned, the fruit should be selected when it is fresh and in good condition, as such fruit has less chance to spoil than fruit that is overripe or has decayed spots. After it is graded for size and condition, the fruit should be washed, stemmed, hulled, seeded, peeled, or halved, quartered, or sliced, depending on the kind. Then the work may be proceeded with according to the canning method that is to be followed.

84. If fruits are to be canned by the open-kettle method, certain precautions must be observed in order to insure success. The sterilization of the product cannot be perfect in this method no matter

how carefully the canning is done; and this means that the sugar and the fruit acids must be greatly relied on to assist in preservation. Still, the jars, jar covers, jar rubbers, and any utensils used for filling the jars must be sterilized and kept in boiling water until the fruit is ready to be canned. Another thing to guard against is the discoloring of the fruit. Any fruit that is likely to become discolored after it is prepared for canning should be kept in salt water until it is ready to be cooked. A solution consisting of 1 teaspoonful of salt to each quart of water will answer for this purpose.

After the fruit has been prepared and while the containers, etc. are being sterilized, it is necessary to prepare the sirup that is to be used. For the sweet fruits of Group 1, No. 1 or 2 sirup should be made; for the sour fruits of this group, No. 2 or 3 sirup; and for the very sour fruits, No. 4 or 5 sirup. The hard fruits may be canned by this method with No. 1, 2, or 3 sirup, while the special fruits require No. 4 or 5 sirup. If the fruit is to be canned for pie, it will be advisable to use thin sirup and then use more sweetening when pies are made.

When the sirup is made by mixing the sugar and water and bringing it to a boil, the prepared fruit should be dropped into it and cooked. The fruit should be cooked in the sirup until it may be easily pierced with a fork or until it is soft. Berries have to be cooked only a few minutes, while the hard fruits may require from 10 to 15 minutes. The jars should be placed upright in a pan of hot water while the boiling fruit from the kettle is poured into them, and as each jar is filled the rubber should be put in place and the cover adjusted and secured. It is important to close one jar before filling another, because the longer a jar remains open the more bacteria will be permitted to enter. Even by working as rapidly as possible and taking the greatest precaution, a certain number of bacteria are bound to enter in this method of canning. After the jars are filled and sealed, they should be placed upside down or on the side to cool and test for leaks.

85. If the cold-pack method is employed in canning fruit, it is possible to obtain a sterilized product that is dependent for preservation on neither the sirup used nor the acid of the fruit. In this method, the jars, jar tops, covers, and utensils for handling the fruit do not have to be sterilized beforehand. They may simply be washed clean and kept hot in clean water until they are needed. After the fruits are prepared, some are blanched or scalded and cold-dipped, while others are not. They are then packed into jars and boiling sirup is poured over them. Then the rubbers are adjusted, the covers placed on, but not made tight, and the jars are placed under water in the water bath or on the racks in the pressure cooker, which should contain a small amount of water, as has been explained. After cooking the required length of time, the jars of fruit are removed from the cooking utensil, sealed, and allowed to cool.

The sirup used in the cold-pack canning method may be heavier in each case than that mentioned for the open-kettle method, because there is no evaporation, as is the case where fruits are boiled in the sirup before they are placed in the cans, but less will be required if the packing is well done.

GROUP 1--SOFT FRUITS

86. SWEET SOFT FRUITS.--The sweet fruits included in Group 1 --blackberries, huckleberries, elderberries, ripe gooseberries, mulberries, raspberries, and sweet cherries-may be canned in exactly the same way, so that the same general directions will apply to all. Prepare the different kinds of berries, which should be as fresh as possible, by looking them over carefully and removing the poor ones, and then washing them. To wash them, pour them into a colander and dip it up and down in a large pan of clean, cold water. The less handling such fruits receive, the more perfect will they remain for canning. Prepare sweet cherries, which should be procured with the stems on if possible, by first washing them and then stemming them. They may be pitted, or seeded, or they may be left whole, depending on personal preference. Cherries that are not pitted will keep their shape and have a good appearance, but they are not so convenient for eating as those which have been pitted.

87. After the fruit has been prepared in the manner just explained, pack it closely into the hot, clean jars, using a spoon for this purpose and turning each jar as the fruit is poured into it. Press the berries or the cherries down carefully, so that 2 quarts of them will fill a 1-quart jar. Then proceed to make the sirup. As these fruits are the sweetest, they require less sugar than any other. If such fruit after it is canned is to be used for pie making, sirup No. 1 or 2 will be suitable, but if it is to be used for sauce, No. 3 sirup may be used. When the mixed sugar and water is boiling rapidly, pour it over the fruit packed into the jars. Then place the rubbers, adjust the jar tops, and proceed to sterilize and cook the cans of fruit. Boil these in the water bath for 15 minutes, or cook them in the pressure cooker for 8 minutes at a pressure of 5 pounds or for 4 minutes at a pressure of 10 pounds.

88. SOUR SOFT FRUITS.--Of the sour fruits, STRAWBERRIES, GRAPES, and CURRANTS require about the same quantity of sugar, that contained in sirup No. 3, 4, or 5 usually being sufficient. Otherwise, the canning process, including the length of time for processing, does not differ materially from that just given for sweet soft fruits.

In the case of strawberries, those which are of medium size and rather dark in color are best for canning; in fact, very large, light-colored strawberries will shrink more than any other kind. The berries are washed in the same way as other berries, but they should not be allowed to stand in water for any length of time, because this will tend to make them soft and mushy. Strawberries must be stemmed after they are washed, and for this purpose a strawberry huller should be utilized. Such a device, which is shown in Fig. 1, permits the stems to be removed without crushing the berries and soiling the fingers.

In preparing currants for canning, the procedure is the same as for the fruits already mentioned; and the same thing is true of grapes that are

not to be seeded. If the seeds are to be removed, however, the procedure up to getting the cans of fruit ready for processing is different, as is here pointed out. After washing the grapes, squeeze the pulp from the skins and then cook it in a kettle for a sufficient length of time to make it soft. Remove the seeds by forcing the pulp through a sieve. Then add as much sugar as would be used for making the required sirup, and cook until the sugar is dissolved. With this done, add the sweetened, seedless pulp to the grape skins and fill the jars with this mixture. Then continue the canning process as for the other fruits of this group.

89. The procedure in canning APRICOTS and PEACHES, the other two sour soft fruits, differs slightly from that required for strawberries, grapes, and currants. So that the skins of both of these fruits may be easily removed, they must be scalded, which is an operation that corresponds to blanching in vegetable canning.

For canning purposes, only firm, fresh apricots and peaches that are not overripe should be selected. Also, in the case of peaches, care should be taken to see that they are of the _freestone_ variety, as such peaches may be split easily. _Clingstone peaches_ should not be chosen unless the fruit is to be canned whole or unless an implement for removing the seeds, or stones like that shown in Fig. 2, is at hand. Proceed with the canning of either apricots or peaches by first scalding them. To do this, put the fruit in boiling water for 1 to 3 minutes, depending on its ripeness. Next, cold-dip it quickly, remove the skins, and, if desired, cut each one in half and remove the seed, or stone. When thus prepared, pack the fruit into hot jars as tightly as possible, pour sirup No. 3, 4, or 5 over them, filling each jar, adjust the rubber and jar top, and proceed as directed for the cold-pack method. In the water bath, boil the cans of fruit for 15 minutes; in the pressure cooker, cook them for 10 minutes at a 5-pound pressure or for 6 minutes at a 10-pound pressure.

90. VERY SOUR SOFT FRUITS.--Some of the fruits of the third subdivision of Group 1, namely, SOUR CHERRIES, CRANBERRIES, and GREEN GOOSEBERRIES, may be prepared and canned in the same way as those included in the first subdivision. The cherries may be left whole or they may be seeded, as preferred, and all the fruit must, of course, be fresh. For these very sour fruits, sirups Nos. 4, 5, and 6 are required, and the processing time is 15 minutes in the water bath and 10 minutes at a 5-pound pressure or 5 minutes at a 10-pound pressure in the pressure cooker.

91. PLUMS for canning should be fresh and firm, but not overripe. This fruit may be canned with the skins on, but some varieties permit the skins to be removed after scalding, and this may be done if desired. Prepare the plums for canning by washing them, and, if the skins are to be left on, by piercing each one in several places with a fork to prevent the skins from cracking. Then scald the plums for about 1-1/2 minutes, cold-dip them quickly, and pack them closely into the hot jars. Pour sirup No. 4, 5, or 6 over the fruit in the jars, using sirup No. 6 if they are very sour, adjust the rubbers and the covers, and proceed according to the canning method selected. In the water bath, cook for 15

minutes; in the pressure cooker, cook for 10 minutes at a pressure of 5 pounds or for 6 minutes at a pressure of 10 pounds.

92. RHUBARB for canning should be selected when it is most tender. The variety having red stems is the most attractive after it is canned. Only the heavy stems, which should be cut from the leaves, may be canned. Cut these stems into inch lengths, blanch them 1 to 3 minutes in boiling water, and cold-dip them quickly. Then pack these pieces into the jars. If the rhubarb is being canned for sauce, fill each jar with sirup No. 5 or 6; if it is being canned for pie, use sirup No. 1, 2, or 3. Next, adjust the rubbers and covers and proceed with the processing. In the water bath, cook for 15 minutes; in the pressure cooker, cook for 10 minutes at a 5-pound pressure or for 6 minutes at a 10-pound pressure.

GROUP 2--HARD FRUITS

93. APPLES.--The canning of apples should be done when there is a large supply of summer apples that cannot be stored for winter use or used at once. Canning is also a good means of utilizing windfall apples. This fruit may be canned in quarters for sauce, in slices for pie, or in any other desirable shape or condition.

After apples for canning are selected, wash them, scald, or blanch, them for 1 to 5 minutes in boiling water, and cold-dip them quickly. Next, peel and core them, and cut each one into pieces of any desirable size. As these pieces are cut, drop them into salt water--1 teaspoonful of salt to each quart of water--to prevent them from discoloring. Then pack the fruit into the jars and fill the jars with boiling sirup. If the apples are intended for pie, use sirup No. 1, 2, or 3; if they are for sauce, use sirup No. 3, 4, or 5. When the jars are filled, adjust the rubbers and covers and proceed with the processing. If the pieces are large, cook them in the water bath for 20 minutes; if they are medium in size, cook them for 15 minutes; and if they are in the form of slices, cook them for 10 minutes. If they are to be processed in the pressure cooker, cook them for 8 to 12 minutes at a pressure of 5 pounds or for 6 to 8 minutes at a pressure of 10 pounds.

If the apples to be canned are first baked or made into a sauce, simply pack them into jars and process them for a few minutes.

94. QUINCES.--Quinces may be canned alone, but they may be combined with apples to good advantage. If canned alone, they may require a heavier sirup than if apples are used with them. Prepare the quinces in the same way as apples. If apples are to be canned with them, cut the pieces of apples twice the size of the pieces of quinces. This should be done because more time is required for cooking the quinces soft. After packing the jars and pouring in the sirup, proceed with the processing. If quinces alone are in the jars, cook them in the water bath for 30 minutes; but if quinces and apples are combined, cook them for 20 minutes. In the pressure cooker, cook the jars of fruit for 12 to 15 minutes at a 5-pound pressure or for 10 to 12 minutes at a 10-pound pressure.

95. PEARS.--Pears for canning should be firm, but not hard. After sorting and washing them, blanch them for 1 to 3 minutes and cold-dip them quickly. Then pare, halve, and core them. Pack them immediately into the jars and pour sirup No. 3 or 4 over them. Next, adjust the rubbers and covers and proceed with the processing. In the water bath, cook them for 20 minutes; in the pressure cooker, cook them for 8 minutes at a 5-pound pressure or 6 minutes at a 10-pound pressure.

GROUP 3--SPECIAL FRUITS

96. FIGS.--Although figs are not a common fruit, there are parts of this country, particularly on the western coast, in which they are abundant. For canning, ripe figs should be selected. To prepare them, blanch them for 2 minutes in boiling water and cold-dip them. Then pack them into the jars and fill the jars by pouring sirup No. 4, 5, or 6 over the figs. Proceed with the remainder of the process as in canning peaches.

97. KUMQUATS AND LOQUATS.--Kumquats and loquats are small acid fruits resembling oranges in color and plums in size and shape. Such fruits are not very common, but they may be obtained in some markets. To can either of these fruits, wash them, blanch for 5 minutes, cold-dip, pack into jars, and fill the jars with sirup No. 5 or 6. In the water bath, cook them for 15 minutes. In the pressure cooker, cook them for 10 minutes at a 5-pound pressure or for 5 minutes at a 10-pound pressure.

98. NECTARINES.--Nectarines are a smooth-skinned variety of peach. Ripe nectarines may be canned in the same way as peaches, but they do not require so much sugar, sirup No. 2 or 3 usually being about right.

99. PERSIMMONS.--Persimmons are a seedy, plum-like fruit common to the southern and southwestern parts of the United States. This fruit is very astringent when unripe, but is sweet and delicious when ripe or touched by frost. Well-frosted persimmons should be selected for canning. Blanch them so that the skin may be removed easily and cold-dip them quickly. Then peel them and pack them into hot jars. Fill the jars with sirup No. 6 and process them in the same way as peaches.

100. PINEAPPLES.--Pineapples are better known than any of the other special fruits. For canning, those ripe enough to permit the center leaves to pull out easily should be selected; also, they should be free from soft or rotten spots, which are most likely to appear first near the bottom. Pineapples are graded in size by the number that may be packed in a case. These sizes are 24, 30, 36, and 42, size 24 being the largest and size 42 the smallest. Sizes 30 and 36 are best for canning.

In canning pineapples, first place each in boiling water for 10 minutes and dip it quickly into cold water. Then prepare it for the cans. This may be done by removing the peeling with a sharp knife, digging out the eyes, and then slicing or dicing; by slicing first and then peeling and taking out the eyes; or by peeling, taking out the eyes, and then shredding it with the aid of a fork. When it is prepared, pack the fruit

into the jars, fill each jar with sirup No. 4 or 5, adjust the rubbers and covers, and proceed to process it. In the water bath, cook for 30 minutes; in the pressure cooker, cook for 12 minutes at a pressure of 5 pounds or for 10 minutes at a pressure of 10 pounds.

CANNING MEAT AND FISH

101. Both fish and meat, including that from fowl and game, may be canned at times that seem convenient and then used when an emergency arises or at a time when the same food will cost more to prepare. Fowl, game, and fish may be canned to special advantage during the season when each is plentiful. The best process for canning such foods is the one-period cold-pack method.

102. MEAT.--In canning meat, whether from domestic animals, fowl, or game, first cut it into pieces of a size that would be suitable for serving at the table. The meat may be left raw or it may be prepared by any desirable cooking process, such as frying, fricasseeing, braizing, etc. Careful attention must be given to the drawing of fowl that is to be canned, because the entire alimentary tract should be removed without being broken. The giblets should not be canned with the rest of the meat, as they will not keep so well. Whether the meat is to be canned raw or cooked, pack the jars as tightly as possible. If the meat is raw, add 1 teaspoonful of salt to each quart of food and fill the jars three-fourths full with boiling water. In case the jar is filled to the top, fat will rise and injure the rubber. If the meat is cooked, add any liquid that may have resulted from the cooking, as well as boiling water, provided more liquid is needed. Then, as in canning vegetables and fruit, adjust the rubbers and covers and proceed with the processing. In the case of raw meat, sterilize for 3 hours in the water bath, or for 1-1/2 hours at a 10-pound pressure in the pressure cooker. In the case of cooked meat, sterilize for 1-1/2 hours in the water bath, or for 30 minutes at a 10-pound pressure in the pressure cooker.

103. FISH.--To prepare fish for canning, first clean it by scaling it and removing the entrails. Wrap the cleaned fish in cheesecloth and steam for 15 minutes. After steaming, remove the bones, which will come out easily, and cut the fish into pieces. Pack the pieces into the jars, and to each quart of the food add 1 teaspoonful of salt. Next, fill each jar three-fourths full with boiling water and continue with the canning in the manner directed for meat.

STORING AND SERVING CANNED FOODS

104. After jars of canned food have been cooled and tested for leaks, carefully wiped with a damp cloth, and then wrapped and labeled, they are ready to be placed in storage. Such food should be stored in an orderly manner on shelves that may be covered to keep off dust, or in a large cupboard provided with doors that may be closed. The temperature of the room in which the canned foods are kept is of no great importance, but, in homes provided with cellars, the cellar is the

logical place in which to store them.

Canned foods, no matter how well the canning may have been done, undergo gradual deterioration. Therefore, those kept for more than a year, will not be so good as those used during the first year after canning. If canned foods from a previous year are at hand when new cans are ready to be stored, the old ones should be placed to the front of the shelves and the new ones to the back, so that the old ones will be used up first.

105. Canned foods take the place of raw foods, and whether they should be cooked or not depends on the kind. In the case of vegetables, most of them may be made ready to serve simply by heating them, although they may be used in the preparation of many dishes, as is evident from the recipes throughout the lessons. In the case of fruits, some may be served just as they come from the can; however, there are many ways of using canned fruits in the making of desserts, as is pointed out in _Fruit and Fruit Desserts_. In the case of meats and fish, the food, if cooked before canning, may be prepared for serving simply by heating it; whereas, if it is canned raw, some cookery method for meat will have to be applied.

When foods are boiled, one reason for a change in taste is that oxygen is driven off by the boiling. Therefore, to improve the taste of canned foods that are to be served without any further preparation, it is advisable, when a jar is opened, to pour the contents into an open dish and thus expose it to the air.

In opening jars of canned fruit, care must be taken not to crack or nick either the top of the jar or its cover. The cover of any kind of jar will come off easily if a little air is admitted. Insert a knife blade between the cover and jar rubber of a glass-covered jar, but do not use a knife to loosen a metal top, as it may bend the edge in places. Hot water poured over the jar will assist in opening it.

SCORING CANNED FOODS

106. In order that the housewife may judge the quality of her own canned products according to standards that have been set by canning authorities, a score card, together with an explanation of the terms and the procedure, is here given. The beginner in canning will do well to score her own foods, so that any fault that may be found can be corrected when similar foods are canned at another time. In fact, the chief purpose of scoring any product is to learn of faults that may be corrected. The scoring should be done as impartially as if a disinterested person were doing it, and if the cause of any trouble is not readily apparent, pains should be taken to find it out.

SCORE CARD	PER CENT.
General appearance	10
Method of sealing	10

Proportion of food to liquid	10
Flavor	35
Texture of food	20
Color	15
Total	100

107. As a rule, scoring, or judging, is done at the time the canned food is to be opened and used.

The _general appearance_ is judged before the jar is opened. If a jar of food is well and symmetrically packed and has clear liquid and a good color, it should receive a perfect score of 10.

The _method of sealing_ must also be judged before the can is opened. A properly filled jar with the rubber and cover in good condition and tightly sealed should receive a perfect score of 10.

The _proportion of food to liquid_ should score 10. The jars should be as full of uncrushed food as possible, and the liquid that has been added should fill all crevices to the very edge of the jar.

The _flavor_ is judged after the can is opened, and if it is perfect, it is entitled to a score of 35. The flavor of canned fruit is injured by any kind of spoiling, such as molding, fermentation, etc. Fruits canned in good condition should retain the characteristic flavor of the fresh fruits; also, they should contain sufficient sugar to be agreeably sweet, but no more. Canned vegetables should retain their characteristic flavors, with no sour, musty, nor disagreeable taste, and be slightly salty. Canned meats and fish should also possess their characteristic flavors.

The _texture of food_ is entitled to a score of 20 if it is perfect. The canned food should be whole; that is, in the original pieces as they were put into the can. Underripe fruit or insufficiently cooked fruit or vegetables do not have the proper texture; neither do overripe or uncooked foods.

The _color_ of canned food merits a score of 15 if it is right. Fruits and vegetables should have retained their natural color. Fading after canning may be prevented by wrapping the cans, as has been explained.

* * * * *

DRYING

PRINCIPLES OF DRYING

108. DRYING consists in removing the moisture contained in foods by

evaporation and thus rendering them less susceptible to the attacks of undesirable bacteria. _Dried foods_, as foods so treated are called, will not replace fresh or canned foods. However, they are valuable in many cases and possess some advantages over such foods. For example, the weight of dried foods is very greatly reduced, the storage space required by them is much less, and they are easy to keep without spoiling and easy to transport. Likewise, the containers for such foods are less costly than those required for canned foods and they are easily procured, since paper boxes or paper bags are satisfactory. In fact, the housewife, by taking care of the bags and boxes that come into the home, can easily provide all the containers she will possibly need at practically no cost.

109. The water in food that is to be dried may be evaporated by applying heat, by bringing the food in contact with moving air, or by subjecting it to a combination of both of these methods. The heat for drying may be obtained from the sun, as in the _sun-drying method_, or from the stove, as in the _stove-drying method_, while moving air for evaporating moisture may be obtained from an electric fan, as in the _electric-fan drying method_.

In the application of any of these drying methods, however, it is important to note that the more surface of food there is exposed, the more quickly will evaporation take place. Drying should therefore be done on devices constructed in such a way that air may pass up through food, as well as across its surface. In drying foods, the racks should be turned frequently, so that all parts will be exposed equally to the heat or the currents of air. Also, the food must be turned over often, in order that all parts will dry evenly.

110. Any fruit or vegetable may be dried if the method is properly applied, but there is usually more or less change in both the flavor and the color of the dried food. The more rapidly the drying can be done, the more natural will the color and flavor remain; whereas, the longer the process is continued, the greater will be this change.

Foods should be dried when they are in such quantity that they cannot be used to advantage in the raw state, when there is no market for them, when the owner cannot afford to give them away, and when home canning ceases to be practical and profitable. In other words, if it is not practical to save foods in another way, they should be dried.

DRYING METHODS

111. DEVICES FOR DRYING.--Many manufactured devices may be had for the drying of foods. Some are made so that they may be placed on top of a stove, like that shown in Fig. 23. This device is in the form of a metal box. It has a tray for holding the food to be dried, and underneath this is a space for holding water. Water is poured into this space through a funnel in one corner, and heat for drying is supplied by heating the water. Other devices are made so that they may be suspended over a stove, put into a stove oven, or used out of doors. Still others have a

heating device placed inside of them. It is possible, however, to make drying devices in the home that will answer the purpose just as well as the devices that may be bought.

[Illustration: FIG. 23]

As has been stated, drying devices should be so made that the air may pass up through the food and across its surface. A pan, a platter, or a solid board, as will be readily seen, is not so good for drying as a wooden frame of convenient size that has small slats or fine, rustless-wire netting, or screening, attached to the bottom. Such a device may be covered with cheesecloth to keep out dirt. If it is to be used in the oven or set in the sun, a nail driven part way into each corner will provide feet and thus keep it from resting on the oven floor or any other flat surface.

For suspending food that is to be dried over a stove, a rack like that shown in Fig. 24 may be easily made in the home. As will be observed, it consists of three trays fastened together. These trays are suspended by four strings tied to another string that runs over small pulleys. The pulleys are attached to a wooden brace that is secured to the kitchen wall. The pulleys and string permit the rack to be raised or lowered, so that the food may be easily put into and taken out of the trays.

[Illustration: FIG. 24]

112. SUN-DRYING METHOD.--If food is to be dried in the sun, spread it in a single layer on each tray, cover the trays so that no dirt will fall into them, and set them out of doors so that the sun's rays will strike them. Glass covers will help to increase the heat from the sun. As the sun changes, change the position of the trays or turn them. Food that is being dried outdoors should be brought into the house when the sun goes down and put out again the following morning. This procedure should be kept up until the food is so dry as to be _leathery_; that is, in a condition that will permit of bending without cracking.

113. STOVE-DRYING METHOD.--If food is to be dried by the stove-drying method, it may be placed in the oven, on top of the stove, or suspended above the stove.

114. If the oven is to be used, a device that fits the oven should be employed. Spread the food on the trays in single layers, and put the device into the oven. The temperature of the oven demands attention in this method. Only a very moderate heat may be applied at first, 110 degrees Fahrenheit being considered the ideal temperature for beginning. As it is difficult to hold an oven at such a low temperature if a fire is burning, the oven door should be left open to admit air. The temperature of the oven of a coal stove in which the fire is banked or is being allowed to go out is usually ideal for drying foods. If desired, the heat of an oven may be gradually increased to about 180 degrees as the food dries; but the application of greater heat is liable to scorch the food and injure its flavor. The food must be turned often to permit it to dry evenly.

115. If food is to be dried on top of the stove, the device shown in Fig. 23 will prove satisfactory. The same arrangement may be improvised by placing a metal tray over a large flat vessel of water. Place the food to be dried in a single layer on the tray over the water. Let the water boil and keep it boiling, and turn the food frequently so that the heat will be applied to all sides. Continue this process until the food is leathery, when it may be stored.

116. If food is to be dried in a rack suspended above the stove, a rack like that shown in Fig. 24 should be used. Cover the trays in the rack with a single layer of food, and dry it to the leathery stage, when it may be removed and stored. In using this device, only a coal or a wood stove is practical. When the heat coming from the stove is not great, the rack may be allowed to come close to it, and when the heat is intense the rack may be drawn up. Regulating the distance of the rack from the stove will tend to keep the food at a uniform temperature and allow it to dry evenly, especially when the food is turned from time to time.

117. ELECTRIC-FAN DRYING METHOD.--If a house is wired for electricity, drying foods by means of the air-currents generated by a moving electric fan is a simple matter. Use devices like those required for the sun and oven-drying methods. Spread the foods to be dried on the trays in a single thin layer, and arrange them so that the air from the electric fan will blow over them. Turn the trays as the food dries, so that one part does not dry sooner than another; also, turn the food frequently so as to expose all parts alike. If the fan can be placed so as to blow across a stove and thus blow heated air on the food, it will dry more quickly. A very warm kitchen is an excellent place in which to do the work with an electric fan, as the combination of air and heat does the work more rapidly than either one used alone.

118. COMBINATION DRYING METHODS.--A combination of any of the drying methods mentioned may be used effectively. Drying may be started in the sun and completed in the oven, or it may be started with an electric fan and completed in the sun or the oven. Any means whereby the time required for drying may be shortened is advantageous.

DIRECTIONS FOR DRYING VEGETABLES AND FRUITS

119. PREPARATION OF FOODS FOR DRYING.--The correct preparation of the foods before drying is very important. The thinner and smaller the pieces to be dried are cut, the more quickly may the process be completed. Any skins or hulls that would prevent the rapid evaporation of moisture from the food must be removed or broken, and every raw food that is to be dried must first be immersed in salt water made in the proportion of 1 teaspoonful of salt to each quart of water, as this prevents discoloring to a great extent.

120. STRING BEANS.--Beans for drying should be selected while they are young and tender. Wash them and remove the strings if this is necessary.

Cut them in half, lengthwise, with a sharp knife. Drop them into salt water, remove, and spread on the drying trays. Dry by any method selected.

121. CORN.--Corn that is to be dried should be at the dough stage; younger corn contains too much water for good results. Prepare the corn by husking it and removing the silk. Then blanch it in boiling water for 5 minutes, after which cut off the grains close to the cob with a sharp knife. Spread these on the drying trays and proceed according to the method desired.

122. GREENS.--Wash the greens thoroughly. Cut across the leaves several times. Drop them into salt water, remove, and spread on the drying trays. Dry by any method selected.

123. TUBER AND ROOT VEGETABLES.--Irish potatoes, sweet potatoes, carrots, parsnips, and even onions may be successfully dried. First peel or scrape them. Then slice or cut them into small pieces. Drop them into salt water, remove from the water, and spread them on the drying trays. Dry them by the method selected.

124. SMALL FRUITS.--Berries, cherries, and other small fruits may be dried, but since they contain considerable water, the drying is not accomplished very rapidly. Ripe, firm fruit should be selected and cleaned. Cherries should have the seeds, or pits, removed. Such fruits must be dried as quickly as possible, or they will spoil in the process.

125. APPLES, QUINCES, AND PEARS.--In order to dry apples, quinces, and pears, wash, peel, core, and cut the fruit into eighths. Put the peeled fruit into the salt water and keep it there until all are peeled and cut and ready to dry. Then spread the cut pieces in a thin layer on the drying trays and proceed according to the method desired.

126. PEACHES AND APRICOTS.--Peaches and apricots are most easily dried with the skin on. Wash them thoroughly and, in the case of peaches, rub the fuzz off the skins. Cut the fruit into halves, remove the seeds, or stones, and drop the halves into salt water and keep them there until they are ready to be placed on the drying trays. Dry by any process desired.

STORING AND COOKING DRIED FOODS

127. When foods are taken from the various drying devices to be stored, they still contain a very small quantity of moisture. This moisture, however, is not distributed evenly, because some of the pieces of food are larger than others, or some have been exposed more than others to heat or air in drying. To offset this unequal drying, the containers in which the foods are to be stored should not be closed permanently as soon as the food is put into them. Rather, once a day, for about 3 days, the food should be poured from one container into another and back again several times. This will mix all the food and distribute the moisture equally.

128. The object in storing dried foods is to keep them as dry as possible; that is, not to allow them to absorb moisture from the air. The best containers in which they may be placed are those coated with paraffin. Paper bags or boxes may be prepared in the home by dipping them into paraffin, although heavy paper containers already covered with paraffin may be bought in supply stores. Heavy paper or cloth bags may be used, provided they are stored in a dry place where there is no danger from rats and mice. Containers of any kind should be securely tied before storing them permanently. Bags and boxes of dried food are preferably suspended from rafters in an attic, but if this is not possible a rack or a bin located in a place that is not damp will answer.

It is well, in storing dried foods, to use containers that will hold only a small quantity of food, so that when some is taken out to be cooked a large amount will not be exposed. It is best to store just enough for a meal or two in each container.

129. Before dried foods are cooked, as much as possible of the water evaporated in drying should be restored. In order to do this, soaking is necessary. The dried food should be put into cold salt water made in the proportion of 1 teaspoonful of salt to 1 quart of water and soaked for at least 1/2 hour. The salt water seems to help restore the original color of the food. When dried vegetables are to be cooked, they should be cooked in the salt water in which they are soaked; when dried fruits are to be cooked, the salt water should be poured off and fresh water used. Long, slow cooking at a low temperature is better for all kinds of dried foods than rapid cooking. The fireless cooker will be found valuable for cooking dried foods.

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CANNING AND DRYING

EXAMINATION QUESTIONS

(1) Give three reasons for canning food.

(2) What foods may be canned?

(3) (_a_) How may satisfactory canning equipment be provided at little or no cost? (_b_) What metals are not good for canning or preserving kettles?

(4) (_a_) What are the requirements for satisfactory types of jars? (_b_) What are the qualities of good jar rubbers?

(5) What kind of tin cans should be used for canning fruits or vegetables that contain acid?

(6) (_a_) Why should care be exercised in the selection of foods to be canned? (_b_) What points must be considered in the selection of foods

for canning?

(7) Why do canned foods spoil?

(8) How may canned foods be prevented from spoiling?

(9) (_a_) What are spores? (_b_) What connection have spores with the spoiling of canned food?

(10) Mention three things that assist in the keeping of canned foods.

(11) (_a_) How should jar covers and rubbers be treated in the open-kettle canning method? (_b_) Describe the filling and closing of jars in this method.

(12) (_a_) Describe the utensil used for processing in the one-period cold-pack canning method. (_b_) How should jars, covers, and rubbers be treated in this method?

(13) (_a_) How are foods blanched and scalded, and why are blanching and scalding done? (_b_) How are foods cold-dipped, and why is cold-dipping done?

(14) (_a_) How should foods be packed in jars in the cold-pack canning method? (_b_) How should the rubber and cover be adjusted before processing? (_c_) When should you begin to count the boiling time for food that is being processed in the water bath?

(15) (_a_) How and when should jars be closed in the cold-pack method? (_b_) How should jars of food be cooled?

(16) (_a_) How should jars of food be treated for storage? (_b_) How should they be stored?

(17) Mention some advantages of dried foods over fresh or canned ones.

(18) What important points should be considered in the process of drying food?

(19) What are the proportions of salt and water into which foods that discolor are placed before they are canned or dried?

(20) What precautions should be observed in the storing of dried foods?

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JELLY MAKING, PRESERVING, AND PICKLING

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VALUE OF JELLIES, PRESERVES, AND PICKLES

1. Like canning and drying, JELLY MAKING, PRESERVING, and PICKLING are methods of preparing perishable foods to resist decomposition and change. When treated by any of these three processes, fruits and vegetables will keep for long periods of time and will thus be ready for use during the seasons when they cannot be obtained fresh. The preservation of food by making it into jellies, preserves, and pickles does not, as in the case of canning, depend on the sterilization of the product, but rather on the use of certain ingredients that act as preservatives. These include sugar, spices, salt, and vinegar, all of which are considered harmless preservatives in both the home and the commercial preparation of foods.

2. The making of jelly, preserves, and pickles may seem like an extravagance in the expenditure of money for materials, as well as of time and energy on the part of the housewife. Whether this is the case or not is a matter that must be decided by the housewife herself. If these foods are not of enough value to her in the preparation of meals and the feeding of her family to make it worth her while to use her time and materials in storing them for winter use, then it is not wise for her to prepare them. But foods so preserved usually have sufficient merit to warrant the expenditure of the time and the money required in their making.

3. In the first place, it will often be necessary to throw away material that would make excellent jelly or jam unless the sugar can be supplied and the time given to make this material into something that is edible and at the same time attractive. As is well known, all through the canning season, there is some material, which may have been intended for canning, but which, for some reason, cannot be used in that way. Such material should be utilized in the preparation of these foods. For instance, some of the berries and other fruits bought for canning may be found to be too ripe to make a good-looking product, but may be very satisfactory for the making of jars or jellies. Then, too, if the open-kettle method of canning is used, there is almost certain to be a superfluous amount of juice that would be wasted if it were not used in the making of jelly. Such material need not necessarily be used at the time, for it may be canned and then made up later at some more convenient time.

In addition to material of this kind, there is often a surplus of vegetables and fruits on hand, particularly if one has access to a garden. Much of this can be canned and dried, but what is not desired for these purposes might be wasted if it were not made up into appetizing jellies, preserves, and pickles.

4. Even though it were not necessary to consider the matter of waste and the utilizing of surplus fruits and vegetables, there would still be sufficient reason for the making of jellies, preserves, and pickles, because these foods, when properly prepared, have great value in the meal. Jellies and preserves, because of the large quantity of sugar used in them, are foods high in carbohydrate. In view of this fact, they should be considered as a part of the meal in which they are served,

instead of being used extravagantly or regarded as something extra in an already sufficiently large menu.

Besides their importance in food value, they should have a place in the diet because they stimulate the appetite through their attractive colors and delicious flavors. The familiar fact that a child will refuse to eat plain bread and butter, but will accept the same piece when it has been made attractive by the addition of a little jam, argues much for the use of foods of this sort in children's diet. As it is with children, so it is to a large extent with adults. During the winter months, when fruits and fresh vegetables are scarce and expensive, practically every one finds jellies and preserves appetizing, for these things, in a measure, take the place of the foods that are difficult to procure.

5. Not so much can be said of the various kinds of pickles, as they are not so valuable in the diet from the standpoint of food values. They are made from fruits and vegetables, as are jellies and preserves, but the preservatives used in their preparation are vinegar and spices. In addition to having no food value, such ingredients produce overstimulation and irritation in the alimentary tract, toughen the cellulose in the foods used, and consequently often cause indigestion and various gastric disturbances. For these reasons, pickles should not be included in the diet of children. However, because of the stimulation they produce in the stomach, foods of this kind, if taken in small quantities, are properly served as appetizers, and can be eaten by normal adults without fear of digestive disturbances. Then, too, as every one who has meals to prepare knows, they are valuable for relieving monotony in the diet, a point that should not be overlooked.

6. Because the preservation of food in jellies, preserves, and pickles is accomplished by the use of certain preservatives instead of by the sterilization of the food, as in canning, these preparations do not mold or spoil readily. Therefore, containers of a different nature from those used in canning may be used to store these foods. Jars having tightly sealed covers are not required, but such containers as wide-necked bottles, stone jars or crocks, glasses, etc. may be utilized for this purpose. In fact, containers of almost any description may be used for jellies, preserves, and pickles. They should, of course, be sealed in some way to prevent the entrance of bacteria, and various methods of accomplishing this have been devised. A very satisfactory way consists in pouring melted paraffin over the top of the food and then covering the container with a piece of heavy paper and tying this on securely with cord.

7. Since jellies, preserves, and pickles occupy a place of importance in the diet and at the same time provide an opportunity to utilize material that might otherwise be wasted, they are entitled to a certain amount of attention from the housewife. To equip her with the knowledge she needs for this work and give her practice in jelly making, preserving, and pickling, the details of these processes are taken up, step by step, in this Section.

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JELLY MAKING

PRINCIPLES OF JELLY MAKING

8. JELLY MAKING consists in cooking fruit juice with sugar until, upon cooling, it will solidify, or jell. While this is not a difficult nor a complicated process, there are some housewives who do not have success with it. Often the result may be very good when a certain fruit is used, whereas it may be entirely unsatisfactory at another time, even though the same fruit is used and practically the same procedure is followed. If the best results are to be assured in jelly making, the principles that are involved in this process must first be thoroughly understood and then the correct procedure must be painstakingly followed out.

9. To solidify properly and thus become a desirable jelly, the fruit juice that is used for this purpose must have the following characteristics and treatment: (1) it must contain certain jelly-making properties; (2) it must be extracted properly; (3) it must be combined with the correct proportion of sugar; and (4) it must be cooked the proper length of time. There are, of course, numerous degrees of solidity of jelly, varying from that which will barely retain its shape to that which is very tough and hard, but neither extreme is desirable. To be right, the jelly should be firm enough to stand up well, but should be tender and soft when a spoon is cut into it.

10. Fruit is the principal ingredient in the making of jelly, as it is the source from which the juice is obtained. Such imperfections in fruits as poor shape or unattractive appearance do not count in this matter, since only the juice is used; but they must contain jelly-making properties in order that jelly can be made from them.

Green or slightly unripe fruits are better for jelly making than fruits that have become ripe. In fact, when in this immature state, fruits may be used to make jelly, whereas the same fruits, when perfectly ripe, often will not make jelly at all, or, if they do, will produce a jelly that is inferior in quality.

11. The chief requirement of fruits that are to be used for jelly making is that they contain acid and pectin. _Pectin_ is the real jelly-making property of fruits. When it is in the presence of acid and combined with the correct proportion of sugar and the combination is properly boiled, a desirable jelly is the result. Without pectin, however, it is impossible to make the juice solidify, or jell. Pectin is closely related to the carbohydrates, but as it does not yield heat energy nor build tissue, its food value is not considered. In this respect, it is like the cellulose of fruits and vegetables.

It is because green fruits contain more pectin than do ripe fruits that they are more suitable for jelly making. The lack of either acid or pectin need not, however, prevent the making of jelly from fruits, such as sweet fruits, that contain other jelly-making properties, for either or both may be supplied from some other source. In other words, jelly

may be made from any fruit that will yield juice and flavor.

EQUIPMENT FOR JELLY MAKING

[Illustration: FIG. 1]

12. NECESSARY EQUIPMENT.--In the making of jelly, as in the preparation of many other foods, numerous utensils will be found convenient and may, if desired, be supplied to make the work easier. However, the necessary ones are comparatively few in number and, for the most part, are found in almost every kitchen. In Fig. 1 are shown assembled practically all the equipment used in the making of jelly, and if a housewife is provided with these things or substitutes for them, she will be well equipped for her work.

13. KETTLES.--As will be observed, two kettles are required in jelly making. The larger one is used for cooking the fruit, and the smaller one, to cook the juice and the sugar. These should have a perfectly smooth surface, and may be made of almost any material used for such utensils, except tin or iron. These two metals are undesirable, as they are liable to lend to the jelly a disagreeable flavor and in all probability an unattractive color. The one used to cook the fruit should generally be a little larger than the other. As about 6 glassfuls of jelly may be cooked at one time, the kettle in which the juice is boiled should be of adequate size to cook this amount without danger of its boiling over. When fruit juice and sugar are boiled together, the mixture often boils up and runs over if the vessel is not large enough.

14. JELLY BAG.--The jelly bag, which is used for straining the boiled fruit and thus obtaining the juice, may be a home-made one or, as shown in the illustration, one that is purchased for the purpose. If the bag is made at home, a heavy, closely woven material, such as flannel, should be selected, so as to prevent the tiny particles of fruit from passing through with the juice. A liquid strained in this manner will be much clearer and will make better looking jelly than that which has been run through a coarse material, such as cheesecloth. The juice can be strained very conveniently if the bag is attached to a wire arrangement, like the one shown, or to an upright standard that can be fastened to a chair or a table, for then the bag is held securely over the vessel into which the juice drips. Sometimes, especially when more than one extraction of the juice is to be made, the first extraction is made by means of a strainer or a colander and the juice thus obtained is then strained through the bag.

15. ADDITIONAL UTENSILS.--As accurate measurements are absolutely essential in jelly making, a measuring cup should be included in the equipment. Then, too, a quart measure will be found very convenient, especially if large quantities of materials are to be cooked at one time. A large spoon or two for stirring, skimming, and testing should also be provided. The spoon used for skimming will produce better results if the bowl contains holes that will permit the juice to drop back into the vessel, for then none of the juice will be wasted.

16. CONTAINERS FOR JELLY.--Various types of receptacles in which to keep jelly are in use, some turning out more attractive molds than others. The shape of the mold, however, is a matter of minor importance. Almost any wide-mouthed glass receptacle with comparatively smooth sides will do very well, since the sealing of jelly is not a difficult thing to do. Therefore, new receptacles should not be purchased if there is a supply of any suitable kind on hand, for many other containers besides purchased jelly glasses may be used for this purpose. The most convenient type, which may be bought in any store selling kitchen utensils, is that shown in Fig. 1. As will be observed, these are somewhat broad and not very tall. A mold of jelly turned from a tall, narrow glass does not stand up so well as that turned from a flat, wide one. Then, too, a tall glass is much more likely to tip and spill than a more shallow one.

17. Metal covers that fit the tops of the glasses, like the ones shown, are the most convenient kind that can be used, but they are not an absolute necessity. In their place may be used paper caps that fit the glasses, or the tops of the glasses may be covered with paper and then tied. Before a cover of any kind is put on a glass, paraffin, several cakes of which are arranged on a plate in Fig. 1, is melted and poured in a thin layer over the top of the jelly itself.

To designate the kind of jelly, it is advisable to label the glasses with neat labels, a box of which is included in the equipment here shown.

18. Paraffin-covered paper cups have been recommended to take the place of jelly glasses, and while they do very well in the case of scarcity of containers they have some disadvantages. In the first place, they can be used only once, as it is impossible to wash them. In addition, it will be necessary to wait until the jelly is partly cold before pouring it into such cups, as hot jelly will melt the paraffin on the surface of the paper.

PROCEDURE IN JELLY MAKING

19. When the necessary utensils have been conveniently placed and the desired fruit has been selected, the housewife may proceed at once to the work of making jelly. Each step is here outlined in the order in which it should be taken up in doing the actual work. The entire procedure should be properly followed out in order to insure the best results, and every part of the work should be carefully done so as to avoid any waste of material.

[Illustration: FIG. 2]

20. COOKING THE FRUIT.--Prepare the fruit in whatever way is necessary. The preparation needed will depend, of course, on the kind of fruit selected for the jelly, but usually not so much preparation is needed as in the case of canning. For instance, when crab-apple jelly is made, the

stems are removed and the fruit is cut into halves or quarters, but they need not be peeled nor have the seeds taken out. Specific directions for the different varieties of fruits are given in the various recipes. The chief precaution to take in preparing the fruit, no matter what kind is used, is to see that it is thoroughly cleaned.

With the fruit prepared, put it into a large kettle and add enough water to start the cooking and prevent scorching. Some fruits will require more water than others, especially when they must be cooked a long time in order to soften them sufficiently to extract the juice. Juicy fruits, like plums, need only the minimum amount of water, while drier fruits, such as apples, require more. Place the kettle on the stove, as in Fig. 2, and allow the fruit to cook until it is soft or is reduced to a pulp. The length of time for cooking will also depend entirely on the kind of fruit that is being used.

21. EXTRACTING JUICE.--When the fruit is thoroughly cooked, pour the pulp and the juice that has formed into the jelly bag and allow it to drip into a pan placed directly under the bag, as shown in Fig. 3. Formerly, it was the custom to let the juice drip until no more remained in the bag. This method is followed to some extent at present, but it is falling into disuse, as it is not the most economical way of extracting the juice from the pulp. More juice can be obtained and more jelly made from the same amount of fruit if three extractions instead of one are made. Make the first extraction by pouring the pulp and juice into the bag and permitting the juice to drip only until it begins to run very slowly. Then return the pulp to the kettle, add a small quantity of water, and let it boil again for a few minutes. Pour it the second time into the jelly bag, and let it drip as before. Cook it the third time in the same way, and then allow it to drip until all the juice is extracted. At this point, mix the juice from the three extractions. They should not be used separately, for they are much different in quality, the third one being not so good as the second and the second, inferior to the first. On the other hand, when all three are mixed, an excellent quality is the result, provided all conditions are correct, and a larger quantity of juice is obtained for the jelly.

[Illustration: FIG. 3]

22. The quantity of juice that may be extracted depends on the quality as well as the kind of fruit. If the season is a rainy one, the fruits will be found to contain more juice than they would in a dry season. Then, too, if the fruits are picked immediately after a rain, they will contain more juice than the same fruits before the rain. The amount of juice the fruit contains determines, of course, the quantity of water that should be added in the cooking. If only one extraction is intended, 3 to 4 quarts of water may be used for 8 quarts of fruit, depending on the kind of fruit; but if three extractions are to be made, less water should be added for each extraction. In case the extracted juice contains more water than it should have, either because the fruit contains an excessive amount of water or because too much water was added to the fruit in its cooking, the superfluous water will be extracted by boiling the juice with the sugar a little longer as the

jelly is being made.

It is not always necessary to have the fleshy part of fruit for jelly making, for often the skins, seeds, and cores of fruits may be cooked with water and the juice then extracted from them. Another point to remember is that the pulp from which the juice is extracted may sometimes be used for jam or marmalade. If points like these are taken into consideration, it will not be necessary to waste any part of edible fruits.

23. TESTING THE JUICE FOR PECTIN.--When the juice has been extracted from the fruit, it should be tested for pectin in order to determine whether or not it will be satisfactory for the making of jelly. A test that can be applied by the housewife is illustrated in Fig. 4. Into a tumbler, put a tablespoonful of juice and with this mix a tablespoonful of alcohol. If, upon adding the alcohol, the fruit juice turns into a gelatinous, or jelly-like, mass that may be easily gathered up on the spoon, it may be known that pectin is present. As has already been stated, the presence of this substance in fruit juice insures the fact that jelly can be made from the juice.

[Illustration: FIG. 4]

24. USING JUICE LACKING IN PECTIN.--If, in the test for pectin, the addition of alcohol to the fruit juice does not turn the juice into a jelly-like mass, pectin is not present. Such juice, or juice that contains only a small amount of pectin, will prove unsuccessful in jelly making unless some substance or juice high in pectin is added to it. The white skin from the inside of orange, lemon, or grapefruit peelings or the juice from apples, crab apples, currants, green gooseberries, or other fruit containing a large quantity of pectin may be used for this purpose. Also, commercial pectin may be purchased and used with fruits according to the directions that accompany it.

It is always necessary to supply pectin in some way to such fruits as strawberries, peaches, raspberries, blueberries, cherries, pears, etc. To the sweet ones, like peaches and raspberries, lemon juice or other acid fruit juice also must be added if satisfactory jelly is desired.

25. DETERMINING PROPORTION OF SUGAR.--The only other ingredient used in jelly making, besides the fruit juice, is sugar. After the juice has been strained from the fruit, the next step is to determine how much sugar must be used. This is of extreme importance, as the success of the jelly depends very largely on whether or not the correct proportion is used. If too much sugar is added to the juice, a greater quantity of jelly will result, but it will not stand up as it should when it is turned out of the glass. On the other hand, if too little sugar is used, a smaller quantity of jelly than the required amount will be made and it will be tough and sour.

[Illustration: FIG. 5]

26. It is difficult to give the exact proportion of sugar to use with

every kind of fruit, for some fruits require more than others. However, in general, 3/4 cupful of sugar to each cupful of juice, as shown in Fig. 5, will be sufficient. This is especially true if the season has been a dry one and the fruits are neither very sour nor very juicy. After a wet season or with very sour or very juicy fruits, it will usually be necessary to use 1 cupful of sugar to each cupful of juice.

27. Much waste of sugar and spoiling of jelly can be avoided by the use of the test for pectin, which has just been described. After the juice and the alcohol have been mixed, pour the mixture slowly from the glass, noting how the pectin is precipitated. If it is precipitated as one lump, a cupful of sugar may be used for each cupful of juice; if in several lumps, the proportion of sugar must be reduced to approximately three-fourths the amount of juice. If the pectin is not in lumps, but is merely precipitated, the sugar should be one-half or less of the amount of the juice.

[Illustration: FIG. 6]

28. To assist in determining the correct proportion of sugar to use in the making of jelly, the hydrometer, or sirup gauge, which is explained in _Canning and Drying_, will be found helpful. After the juice has been extracted, mix with a small amount of it the proportion of sugar that is to be used when the jelly is cooked. Allow the sugar to dissolve completely, pour a little of the mixture into a glass or a graduate, and insert the hydrometer, as shown in Fig. 6. Regardless of the kind of juice, the hydrometer should register 25 degrees for perfect jelly. If it registers less than 25 degrees, more sugar should be added. Then if it is necessary to add either sugar or juice, the additional ingredient should be carefully measured in order that the proportions may be correct for the making of jelly. It must not be understood that a hydrometer is an actual necessity in the making of jelly, for very good jelly can be made without measuring the ingredients in this manner. However, if a hydrometer is not used, it will be necessary to apply the best judgment possible to the rules given for the proportion of ingredients used in jelly making.

29. COMBINING THE JUICE AND SUGAR.--The mixing of the juice and the sugar may seem like a trivial matter, but in reality much is involved in combining these ingredients properly. It may be done in three different ways. In the first method, which is called _long boiling_, the sugar and the juice are mixed cold and are then allowed to come to the boiling point together. The second, which is known as _mean boiling_, consists in putting the cold juice on the stove, allowing it to boil about half the required time, and then adding the sugar, which has also been heated. In the third, which is known as the _short-boiling method_, the juice is boiled without the sugar almost the full length of time required for making the jelly, and the sugar, which has been heated, is added just before the boiling is completed.

30. Experience in the use of these three methods has shown their advantages and disadvantages. The first one, or the long-boiling process, has the disadvantage of losing sugar through the skimming that

is always necessary in the making of jelly. In addition, the long boiling often causes the sugar to crystallize and thus produces a jelly that would not score very high. The short boiling is not entirely satisfactory, because of the difficulty in determining just when to add the sugar to the juice. The process of mean boiling, having neither of these drawbacks and usually resulting in jelly of excellent quality, is the most satisfactory and the one that is recommended.

[Illustration: FIG. 7]

To carry out this method, place the sugar in a pan in a warm oven or other place where it will gradually become heated without either melting or scorching. Put the juice over the fire in a saucepan and let it boil for 5 to 8 minutes. Then, as shown in Fig. 7, slowly add the correct proportion of hot sugar to the boiling juice, stirring constantly so that the sugar will dissolve as quickly as possible.

31. BOILING THE JUICE AND SUGAR.--The boiling of the juice, both before and after the sugar is added, should be done rapidly. During this process, it will be found that a scum will form over the top of the juice. This should be skimmed off as it forms, for it is a detriment to the jelly. As shown in Fig. 8, draw a large spoon over the top of the boiling juice from time to time and skim off the scum that rises, placing it into any small dish that is handy. It is usually advisable to do as much skimming as possible before the sugar is added, so that only a minimum amount of sugar will be lost.

The length of time required to boil the juice after the sugar is added depends very largely on the way in which the boiling is carried on. If the mixture is boiled rapidly, less time will, of course, be needed than if it is boiled slowly. Therefore, no definite time can be set for the cooking. However, several tests may be resorted to in order to determine whether the sugar and juice have boiled long enough to jell when the mixture is cold.

[Illustration: FIG. 8]

32. TESTING THE JELLY MIXTURE.--The testing of the mixture can be done in various ways, the one to select depending on the success the housewife has in using them. A means very often resorted to consists in dipping a spoonful or two of the mixture out of the kettle and pouring it on the flat surface of a cold dish. If it is cooked sufficiently, it will solidify when it is cold and will appear just like jelly. The disadvantage of this test lies in the fact that the jelly on the stove continues to boil while the test is being made, and as this takes several minutes, the jelly is likely to overboil to a considerable extent. Tests that can be performed more quickly are therefore more satisfactory.

33. A test that invariably proves successful consists in dipping up a spoonful of the juice and allowing it to run slowly from the spoon back into the pan. If, as shown in Fig. 9, a double row of drops forms on the spoon with the last of the jelly that remains, it may be known that the

cooking is finished.

34. Another very satisfactory test is called _sheeting_. In the performing of this test, a spoonful of the jelly is dipped from the pan and then poured from the spoon into the pan again. If it is cooked to the proper consistency, large drops will form at the edge of the spoon and break off quickly.

[Illustration: FIG. 9]

35. FILLING THE GLASSES.--As soon as it has been determined that the jelly is sufficiently cooked, it should be removed from the stove. The glasses may then be filled at once. These, together with the covers, must be thoroughly cleansed before being used, and this can be done while the jelly is cooking. After being thoroughly washed, submerge them in a pan of hot water and allow them to remain there until they are to be used. Keeping them hot in this way will prevent them from cracking when the hot jelly is poured into them. Take out one glass at a time, place it on a small plate or any small dish, and, as shown in Fig. 10, pour the hot jelly into it from the pan to within 1/4 inch of the top. Fill the remaining glasses in the same way, and then set them somewhere out of a draft to cool. If, as the jelly cools, it seems to be a little bit thin, place it somewhere in the sunshine and the heat of the sun will help to thicken it.

[Illustration: FIG. 10]

36. CLOSING AND STORING THE JELLY GLASSES.--The jelly should be allowed to cool completely and should then be closed for storing. The best results are obtained by putting a thin layer of paraffin over the top of the jelly in each glass before applying the cover. To do this, put into a small saucepan as much paraffin as you think will be needed to cover the jelly you have made and set this on the stove to melt. When it has melted, pour a layer about 1/8 inch thick over the surface of the jelly, as shown in Fig. 11. As soon as it cools, it will harden and thus form a protective covering for the jelly. When it is hard, cover the glass in the desired way. Covers of tin are perhaps the most satisfactory, but if these cannot be secured, heavy paper covers that fit into the glasses snugly will answer the purpose very well. In the event of not having covers of either of these kinds, cover the tops of the glasses with paper--any good wrapping paper will do--and then tie this paper securely. Just before putting the jelly away, label each glass with a neat label on which is written the name of the jelly. Then no difficulty will be experienced in selecting at once the kind of jelly desired when one is taking a glass from the place where it is stored.

[Illustration: FIG. 11]

SCORING JELLY

37. With jelly, as with canned fruit, it is a splendid idea for every housewife to score each kind she makes, so that she can determine how it

measures up in its various characteristics. If it falls below the standard, this fact should be known, so that the fault can be remedied the next time. On the other hand, extreme satisfaction is felt if it is found to score high. To assist in scoring jelly, a score card is here given, and following it each one of the characteristics is discussed.

SCORE CARD FOR JELLY

	Per Cent.
Color	20
Solidity	25
Flavor	25
Sugar Content	25
Method of Sealing	5
Total	100

Color.-For jelly having the proper color, 20 per cent. is given. The fruit used in the making of jelly determines to a great extent the color of the finished product, but it is possible to have a very wide difference in the colors of jelly made from the same fruit. To be right, jelly should be clear, bright, and not too dark. If the juice is boiled too long, the jelly will be darker than it should be. If pulp has been allowed to pass through the jelly bag in straining out the juice, either through squeezing the bag or using a bag that is too thin, the jelly will be found to have a cloudy appearance.

Solidity.--When jelly is turned from the glass, it should be firm enough to stand alone. If it has not been boiled long enough, it will crush down and perhaps run like sirup. If it is boiled too long or the proportion of juice to sugar is not correct, it may be tough and leathery. Jelly whose solidity is correct scores 25 per cent. in this respect.

Flavor.--The characteristic flavor of the fruit used in making jelly should be retained as much as possible, and when this is the case 25 per cent. is given to the product. The flavor of the jelly is therefore dependent on the flavor of the fruit. In addition, the flavor depends on the amount of sugar used, the amount of acid in the fruit, and the length of time consumed by the boiling. Jellies boiled too long will be strong in flavor.

Sugar Content.--The sugar content of jelly should be determined by the amount of acid that must be sweetened. An insufficient amount of sugar will result in tough, sour jelly, while too large a quantity will make the jelly taffy-like. The correct amount of sugar, which produces the right degree of sweetness, receives a score of 25 per cent.

Method of Sealing.--The method of sealing may seem like a matter of little importance, but if jelly is not sealed properly, it will not be in good condition when it is to be served. To score in this respect, for which 5 per cent. is given, the jelly should be covered with paraffin and then closed with a cover or with paper in order to exclude the dust and dirt.

RECIPES FOR JELLY

38. Recipes for the kinds of jelly usually made are here given. If the directions given in the procedure for jelly making are thoroughly mastered and then applied to these recipes, the housewife will experience very little difficulty in making any of these varieties. Other jellies may, without doubt, be made by combining the proper fruits. All that has to be done in order to determine whether a certain fruit juice or combination of fruit juices will make jelly is to apply the test for pectin already explained. Whatever quantity of jelly is desired may be made, but usually it can be handled best if not more than 6 glassfuls are made at one time.

39. CRAB-APPLE JELLY.--Crab apples are much used for jelly, as they make a product of good consistency and excellent flavor. Apples may be used in the same way as crab apples with equally good results.

Wash the apples thoroughly, remove the stems, and cut into quarters. Make sure that the apples contain no worms. Put them into a kettle, add about half as much water as apples, and cook slowly until the apples are soft. Strain the juice through a jelly bag. Before it stops dripping, return the pulp to the kettle, add half as much water as pulp, and allow the fruit to cook again. Make a second extraction, and in the same way make a third one. Then combine the juice, and strain all of it through a bag to make it clear. Measure 6 or 8 cupfuls of juice, and pour it into a preserving kettle. Boil for about 5 minutes, straining off the scum that rises to the top. To each cupful of juice, add 3/4 to 1 cupful of sugar that has been heated. Crab apples will require 1 cupful of sugar, but apples milder in flavor will not need more than 3/4 cupful. Boil until the test shows that it has boiled long enough. Pour into hot glasses, cool, and seal. Label and then store for later use.

40. CURRANT JELLY.--If jelly having a tart flavor is desired, currant jelly should be tried. This kind of jelly is especially good to serve with the heavy course of a meal.

Wash and stem the currants. Put them into a kettle and add about one-fourth as much water as currants. Boil until the currants are reduced to a pulp. Pour into a jelly bag and strain. Make at least one more extraction, and a third extraction if there is a fairly large quantity of pulp. When all the juice has been strained from the pulp, strain it again through the bag or a heavy cloth. Measure 6 or 8 cupfuls of juice into a kettle, boil for about 5 minutes, and then add from three-fourths to an equal amount of heated sugar. Remove the scum as it forms, taking off as much as possible before the sugar is added. Continue to boil until the tests show that the mixture has cooked sufficiently. Remove from the heat and pour into hot glasses. Cool, seal, label, and store.

41. GRAPE JELLY.--Thoroughly ripe grapes may be used for jelly, but they are not so satisfactory for this purpose as grapes that are only partly ripe. This is due to the fact that green grapes contain more pectin and,

upon being cooked, produce fewer of the cream-of-tartar crystals usually found in grape jelly than do ripe ones. The procedure for grape jelly is the same as that for currant jelly. If ripe grapes are used, 3/4 cupful of sugar will be needed to each cupful of juice; but if only partly ripe grapes are used, 1 cupful of sugar will be required for every cupful of juice.

42. QUINCE JELLY.--Because of its attractive color and delicate flavor, quince jelly is much favored. The quinces may be used alone, but if a still more delicate flavor is desired, apples may be added to the quinces, or the parings and cores of the quinces may be used with apples or crab apples. To make quince jelly, proceed in the same way as for apple jelly, using 3/4 cupful of sugar to 1 cupful of juice.

43. RASPBERRY JELLY.--Either black or red raspberries may be used for jelly making. To give jelly made from these fruits a better consistency, a small quantity of green grape, crab-apple, or currant juice should be added. The procedure in this case is the same as for currant jelly.

44. STRAWBERRY JELLY.--Unripe strawberries contain a small amount of pectin, but thoroughly ripe ones are almost lacking in this respect. For this reason, strawberries cannot be used alone for making jelly. They make a delicious jelly, however, if currants are combined with them. For each 5 or 6 quarts of strawberries, 1 quart of currants will be sufficient to make a jelly of good consistency. Wash and hull the strawberries and then proceed as for currant jelly.

45. PLUM JELLY.--Plums make a jelly that many persons like. If it is desired to use plums alone, those which are not thoroughly ripe should be selected. Ripe plums do not contain enough pectin for jelly; therefore, a fruit high in pectin, such as crab apples, must be added. The procedure for currant jelly should be followed for plum jelly.

46. PEACH JELLY.--Peaches contain so little pectin that it is almost impossible to make jelly of them unless some other fruit is added in rather large quantities. Currants, crab apples, or green grapes may be used with peaches, and whichever one is selected will be needed in the proportion of about 50 per cent.; that is, half as much additional fruit as peaches is needed. In the making of peach jelly, proceed as for currant jelly.

47. CANNING FRUIT JUICES FOR JELLY.--During the canning season, when a great deal of such work is being done, the housewife often feels that making jelly and preserves is an extravagant use of sugar. Still, fruit juices left over from canning and large quantities of fruit, such as crab apples and currants, that are not suitable for other purposes, will be wasted unless they are used for jelly. If it is not convenient to use the fruit at the time it is obtained, a good plan is to extract the juice as for jelly making and then can it. In case this is done, jelly may be made from the juice during the seasons of the year when less sugar is required for other things.

48. To can fruit juice, extract it from the fruit as for jelly making

and then bring it to the boiling point. Select bottles or jars that may be tightly closed, sterilize them, fill them with the boiling juice, and seal them. Bottles may be used for this purpose if they are well corked and then dipped into melted sealing wax or paraffin. When properly sealed, fruit juices will probably keep without any further effort to preserve them, but to make positively certain that they will not spoil, it is a wise precaution to process the filled bottles or jars in boiling water for about 6 or 8 minutes in the same way in which canned fruit is processed. When treated in this way, fruit juices will keep perfectly and may be made into jelly at any time during the winter.

* * * * *

PRESERVING

PRINCIPLES OF PRESERVING

49. PRESERVING consists in preparing fruits in perfect condition to resist decomposition or change by cooking them in heavy sirup. The cooking is done so slightly that the original form, flavor, and color of the fruit are retained as far as possible. This process is similar to that of canning by the open-kettle method; that is, the fruit and sugar are combined and cooked to the proper consistency in the preserving kettle. Sugar is used in such quantity in the preparation of preserves that it acts as a preservative and prevents bacteria from attacking the foods in which it is used. If preserves of any kind ferment, it may be known that not enough sugar was used in their preparation. The sterilization of the product and the air-tight sealing of the containers, which are necessary in the canning of fruits and vegetables, need not be resorted to in the case of preserves.

50. SELECTION OF FRUIT.--When fruit is to be made into preserves, much attention should be paid to its selection, for, as a rule, only the finest fruits are used for preserving. This is especially true of the smaller fruits, such as berries and cherries, for they are preserved whole. Therefore, in order that they may have a good appearance when preserved, it is necessary that they be as perfect as possible to begin with. In addition, the fruit should be thoroughly ripe, but not mushy nor overripe. As the cooking of the fruits in sirup hardens them to a certain extent, fruits that are not sufficiently ripe cannot be used, for they would be too hard when done. If care is used in selecting fruits that are to be preserved, a good-appearing product will be the result, since this process is carried on in such a way as not to impair their shape.

51. METHODS OF PRESERVING.--Several methods of preserving fruit are in practice, but in general the same principles characterise each one. Probably the most successful method consists in bringing a certain proportion of sugar and water to the boiling point, dropping the fruit into the sirup thus formed, and cooking it for a definite length of time. Boiling fruits in heavy sirup has a tendency to make them firm and solid, rather than to cook them to pieces, as would be the case with

water or a thin sirup. Even very soft berries, when used for preserves, will retain almost their original size and shape if they are properly cooked. Except for the fact that a heavier sirup is used, the process of preserving fruit is exactly like that of canning fruit by the open-kettle method. The chief precaution to take in this method is that as little water as possible be used, so that the sirup may be very thick when the fruit is added.

Another method that may be recommended because it helps to keep the fruit in good condition consists in cooking it in its own juice. In this method, equal quantities of fruit and sugar are put together and allowed to stand until enough juice is formed, preferably overnight, so that the fruit may be cooked without the addition of any water. Strawberries are excellent when preserved in this way.

Whichever method is followed, better results will be obtained if only a few quarts of fruit are cooked at a time. When a large quantity of berries, for instance, is added to the boiling sirup, they will form such a thick layer that they will have to remain over the fire a long time before they come to the boiling point. They will therefore be much more likely to crush and give the finished product a mushy appearance than if a smaller quantity, which will form a thinner layer, is cooked each time.

52. UTENSILS FOR PRESERVING.--The equipment necessary in the making of preserves is similar to that used for making jelly, with the exception of the dripping bag and the hydrometer. A good-sized preserving kettle is, of course, required for the cooking of the fruit and sirup; a measuring cup and a quart measure are needed for the measuring of the ingredients; and a long-handled wooden spoon or paddle is the most convenient utensil with which to stir all foods of this class. Containers similar to those used for jelly will be satisfactory receptacles in which to put preserves, but as preserved fruits are not turned out in a mold, almost any kind of wide-mouthed bottle or jar may be used for this purpose. Paraffin should also be provided, as this should always be used for the first covering to prevent the formation of molds, which are likely to grow on moist sweet substances exposed to the air. Before using paraffin for preserves, they should be allowed to stand until the surface has become absolutely dry. It is well to label preserves, too; so labels should be kept on hand for this purpose.

* * * * *

RECIPES FOR PRESERVED FRUITS

VARIETIES OF PRESERVED FRUITS

53. The several methods of preserving fruits result in considerable variety in the finished product. _Preserves proper_ are those cooked in a heavy sirup, either whole or cut into pieces. In addition to being prepared in this way, fruit may be made into _conserve, marmalade, jam_, and _butter_. Specific directions for the preparation of each one of

these varieties are here given, together with a number of recipes showing the kinds of fruit most suitable for the different varieties. No housewife need deprive her family of any of these delicious preparations if she will familiarize herself with the methods explained and will follow out minutely the directions given. In the making of the various kinds of preserves, just as much care must be exercised as in canning and jelly making if the best results are desired.

PRESERVES

54. STRAWBERRY PRESERVE.--Strawberries selected for preserves should be of the dark, solid variety, if possible, since these shrink less and retain their shape and size better than do the lighter varieties. This fruit is made into preserves probably more often than any other kind, and this is not strange, for it makes a most delicious preserve.

STRAWBERRY PRESERVE

2 qt. strawberries
1/2 c. hot water
1 lb. sugar

Clean the strawberries by placing them in a colander and raising and lowering them into a large pan of water. Remove the hulls and make sure that all the water is carefully drained from the berries. Add the water to the sugar and place over the fire in a preserving kettle that has a smooth surface. Stir until the sugar is dissolved, and allow the mixture to come to a rapid boil. To the rapidly boiling sirup, add the strawberries by dropping them carefully into it. Allow the fruit to come to the boiling point in the sirup, and continue to boil for 10 or 12 minutes. If the berries seem to contain an unusual amount of water, boiling for 15 minutes may be necessary. Remove from the fire and fill into hot sterilized glasses at once, or set aside to cool. It has been found that if the preserves are allowed to stand in the kettle overnight, they will improve in flavor and, because of the absorption of oxygen, which they lose in boiling, they will increase in size. If the preserves are treated in this way, it will be necessary to pour them cold into the sterilized glasses. When the preserves in the glasses are cold, pour melted paraffin over them. Cover them with metal or paper covers, label, and store for future use.

55. CHERRY PRESERVE.--If sour cherries can be secured, an excellent preserve can be made of them. Cherries should, of courser be seeded, or pitted, when they are prepared in this way.

CHERRY PRESERVE

2 qt. seeded sour cherries
1 c. hot water
1-1/2 lb. sugar

Drain off the superfluous juice from the cherries. Add the hot water to

the sugar in a preserving kettle, and allow the mixture to come to a boil. Add the cherries and boil for 10 or 12 minutes. Have hot sterilized jelly glasses ready and fill with the hot preserves. Allow the preserves to cool, cover first with paraffin and then with metal or paper covers, and label.

56. RASPBERRY PRESERVE.--Although red raspberries are a rather soft fruit, they can be used very well for preserves if care is taken not to break them into pieces by too long cooking or too rapid boiling.

RASPBERRY PRESERVE

2 qt. red raspberries
3/4 c. hot water
1 lb. sugar

Wash the raspberries by placing them in a colander and raising and lowering them in a large pan of cold water. Mix the hot water with the sugar in a preserving kettle, place the mixture over the fire and bring to the boiling point. Add the raspberries to the boiling sirup, and when they have come to the boiling point, cook for 8 to 10 minutes. Remove the hot preserves from the fire and pour into hot sterilized jars. Allow them to cool, seal with paraffin and metal or paper covers, and label.

57. PLUM PRESERVE.--A very rich, tart preserve can be made by cooking plums in a thick sirup. Those who care for the flavor of plums will find preserves of this kind very much to their taste.

PLUM PRESERVE

2 qt. plums
1 c. hot water
1-1/2 lb. sugar

Select any variety of plums desired for preserves, and wash them in cold water. Cut them in half and remove the seeds. Place the hot water and the sugar in a preserving kettle, and bring to a rapid boil. Add the plums and boil slowly for 15 minutes. Remove from the fire, pour into hot sterilized jelly glasses. Allow them to cool and cover first with paraffin and then with metal or paper covers. Before storing, label each glass neatly.

58. QUINCE PRESERVE.--Quinces combined with apples make a preserve that finds favor with many. As shown in the accompanying recipe, about one-third as many apples as quinces make the required proportion.

QUINCE PRESERVE

3 qt. quinces, peeled and quartered
1 qt. apples, peeled and quartered
1-1/2 c. hot water
3 lb. sugar

Select well-ripened quinces. Rub the fuzz from the skin with a cloth, and then wash, peel, quarter, and core. If desired, they may be sliced, but they are very nice when preserved in quarters. Select firm apples, wash, peel, quarter, and core them, and cut them the same size as the quinces. Add the water to the sugar, place the mixture over the fire in a preserving kettle, and let it come to a boil. Add the quinces, cook until tender, and remove from the sirup. Then cook the apples in the sirup in the same way, and when tender remove from the sirup. Place the fruits in alternate layers in hot jars. Unless the sirup is very thick, boil it until it becomes heavy; then fill each jarful of fruit with this sirup. Seal with paraffin, cover with metal or paper covers, and label.

59. PEACH PRESERVE.--Although somewhat bland in flavor, peaches make an excellent preserve. Some persons prefer them cut into very small slices, while others like them preserved in large slices.

PEACH PRESERVE

4 qt. peaches
1-1/2 c. hot water
3 lb. sugar

Select firm peaches. Wash, pare, and cut into slices of any desirable size. Add the water to the sugar in a preserving kettle, place over the fire, and allow the mixture to come to a rapid boil. Drop the sliced peaches into the sirup and cook until tender. Have hot sterilized jars ready, fill with the hot preserves, and seal with paraffin. Cover in the desired way and label.

CONSERVES

60. CONSERVES do not differ materially from preserves in their preparation, but they usually consist of a mixture of two or more fruits, whereas preserves are made from a single fruit. All rules that govern the making of preserves apply equally well to the making of conserves.

There are certain fruits that combine very well as far as flavor, color, etc. are concerned, and these are generally used together in the preparation of this food. However, almost any combination of fruits may be made into conserves. This is therefore a very good way in which to utilize small quantities of left-over fruits. Then, too, a cheap material may be combined with a more expensive one to make a larger quantity of a moderately priced product, as, for instance, rhubarb and pineapple. Again, the pulp from which juice has been extracted for jelly may be used to make conserve. In fact, a little ingenuity on the part of the housewife and familiarity with general preserving methods will enable her to make many kinds of excellent conserves, even though she may not have a definite rule or recipe to cover the use of the particular material that happens to be on hand.

61. STRAWBERRY-AND-PINEAPPLE CONSERVE.--The combination of strawberries and pineapple is an excellent one. The accompanying recipe shows how to combine these fruits to make a most appetizing conserve.

STRAWBERRY-AND-PINEAPPLE CONSERVE

2 qt. strawberries
1 large pineapple
1 c. hot water
2-1/2 lb. sugar

Prepare the strawberries as for canning. Peel and slice the pineapple, remove the eyes, and cut into small pieces. Add the water to the sugar in a preserving kettle, and allow it to come to a boil. Drop the pieces of pineapple into the sirup and cook them until they are tender. To this add the strawberries and cook for 5 or 10 minutes longer. The conserve should then be sufficiently cooked to put into the jars. If the juice seems too thin, fill the jars, which should be hot sterilized ones, about three-fourths full of the fruit, and then return the sirup to the heat and boil it until it is the right consistency. Remove the boiling sirup from the stove, and pour it over the fruit in the jars until they are full. Allow the conserve to cool, and then seal, first with paraffin and then with metal or paper covers. Label each glass and set away for future use.

62. STRAWBERRY-AND-RHUBARB CONSERVE.--Rhubarb combines very well with either strawberries or pineapple. The accompanying recipe is for strawberries and rhubarb, but if pineapple is desired, it may be substituted for the strawberries in the same quantity.

STRAWBERRY-AND-RHUBARB CONSERVE

2 qt. strawberries
1-1/2 qt. rhubarb
1-1/2 c. hot water
3 lb. sugar

Prepare the strawberries as for canning. Cut the rhubarb, which should be very tender, into cubes without removing the skin. Add the water to the sugar, and bring to a rapid boil in a preserving kettle. Put the rhubarb and strawberries into this sirup, and cook for at least 15 minutes. Pour into hot sterilized glasses, and when cool seal in the usual way. Label and store.

63. PINEAPPLE-AND-APRICOT CONSERVE.--No more delicious conserve can be made than pineapple-and-apricot conserve. The tartness of the apricots gives a flavor that is pleasing to most persons.

PINEAPPLE-AND-APRICOT CONSERVE

2 qt. apricots
1 large pineapple
1 c. hot water

2-1/2 lb. sugar

Wash the apricots, plunge them into boiling water to remove the skins, and then cut into quarters. Peel and slice the pineapple, remove the eyes, and cut into cubes. Add the water to the sugar in a preserving kettle, and bring to the boiling point. Add the pineapple to the sirup, and cook until tender. Then drop in the apricots and boil several minutes longer. Have hot sterilized glasses ready, fill them with the conserve, and when cool seal in the usual way. Before putting the glasses away, label each one neatly.

64. CRAB-APPLE-AND-ORANGE CONSERVE.--It is a good idea to make crab-apple-and-orange conserve at the same time that crab-apple jelly is made, for the pulp that remains after extracting the juice may be utilized for the conserve. However, if it is desired to make it at some other time, fresh pulp can be prepared for the purpose.

CRAB-APPLE-AND-ORANGE CONSERVE

1 qt. crab-apple pulp
3 lb. sugar
8 oranges

To the crab-apple pulp, add the sugar, and place over the fire to boil. Peel the oranges, scoop out the white portion from the peelings, cut the peelings into thin strips, and add to the crab-apple pulp. Remove the pulp of the orange from the skins and from between the sections, cut it into small pieces, and add to the boiling mixture a few minutes before it is removed from the stove. When it has cooked thick, pour into hot sterilized glasses. Cool and then seal and label.

65. PLUM CONSERVE.--A rather unusual conserve is made by combining raisins and English walnut meats with plums. The accompanying recipe gives directions for the preparation of this conserve.

PLUM CONSERVE

4 qt. plums
1 c. hot water
2 lb. sugar
1 lb. raisins
2 c. English walnut meats

Wash the plums, cut them in half, and remove the seeds. Add the water to the sugar, place over the fire in a preserving kettle, and stir until the mixture comes to a rapid boil. Wash the raisins, which should be seeded, add them with the plums to the sirup, and cook until the mixture is the consistency of jelly. Just before removing from the stove, add the nut meats. Pour the mixture into hot sterilized glasses, cool, seal, and label. If very sour plums are used, increase the amount of sugar.

66. CHERRY-AND-PINEAPPLE CONSERVE.--Cherries combine very well with pineapple in a conserve. Sweet cherries should, if possible, be used for

this purpose.

CHERRY-AND-PINEAPPLE CONSERVE

2 qt. sweet cherries
1 pineapple
2 lb. sugar
1 c. hot water

Wash, stem, and seed the cherries. Slice and peel the pineapple and remove the eyes. Put the sugar and water over the fire in a preserving kettle, and stir until the sirup comes to the boiling point. To this sirup add the pineapple and the cherries and cook until the juice is very thick. Pour into hot sterilized glasses, cool, seal, and label.

67. RED-RASPBERRY-AND-CURRANT CONSERVE.--A conserve having a very attractive color and a most appetizing flavor is made by combining red raspberries with red currants.

RED-RASPBERRY-AND-CURRANT CONSERVE

3 qt. red raspberries
1 qt. red currants
1 c. hot water
2-1/2 lb. sugar

Look the raspberries over carefully, and remove any that show signs of spoiling. Wash the currants and stem them. Add the water to the sugar and put the mixture over the fire to boil. Add the currants to this, and stir until the mixture comes to the boiling point. Boil for several minutes, or until the mixture begins to thicken, and then add the red raspberries. Continue to boil for 2 or 3 minutes longer. Pour into hot sterilized glasses, cool, seal, and label.

68. CARROT CONSERVE.--Conserve made from carrots will be found to be surprisingly delicious, and it has the added advantage of being inexpensive.

CARROT CONSERVE

1-1/2 qt. cooked cut carrots
Rind of 2 lemons
5 c. sugar
2 c. hot water
Juice of 3 lemons

Boil the carrots until tender and chop or put through a grinder with the lemon rind. Then mix with the sugar, water, and lemon juice, and boil for about 1/2 hour or until thick. Put into hot sterilized glasses, cool, seal, and label.

MARMALADES

69. MARMALADES are a form of preserves that differ from the other varieties more in the nature of the fruit used than in any other respect. For marmalades, large fruits are generally used, and, as a rule, the fruits are left in sections or in comparatively large pieces. The preparation of this food, however, differs in no way from preserves proper and conserves, the processes of cooking, sealing, storing, etc. being practically the same.

70. ORANGE MARMALADE.--Oranges combined with half as many lemons make a marmalade that most persons like. In fact, orange marmalade is probably made more often than any other kind.

ORANGE MARMALADE

12 oranges
6 lemons
1-1/2 qt. hot water
5 lb. sugar

Peel the oranges and the lemons in the same way an apple would be peeled, inserting the knife deep enough to cut through the skin covering the sections. Remove the contents of the sections and squeeze out any juice that may remain in the thin skin. Remove the white material from the inside of the peeling, and cut the yellow portion that remains into thin strips. Add the water to the skins and simmer slowly for 1 hour. At the end of this time, add the sugar and the orange and the lemon pulp, and boil until the mixture is thick. Pour into hot, sterilized glasses, cool, and then seal and label.

71. ORANGE-AND-RHUBARB MARMALADE.--If a somewhat different flavor is desired in a marmalade, rhubarb instead of lemons may be used with oranges, as shown in the accompanying recipe.

ORANGE-AND-RHUBARB MARMALADE

8 oranges
1 qt. hot water
4 lb. sugar
3 qt. rhubarb cut into pieces

Prepare the oranges as for orange marmalade. Slowly cook the yellow part of the skin in 1 quart of water for 1/2 hour. To this add the sugar and the rhubarb, and cook slowly until it is quite thick. Stir in the orange pulp and cook until the mixture is again thick. Pour into hot sterilized glasses, cool, seal, and label.

72. QUINCE MARMALADE.--Quinces cut into quarters, cooked, and then forced through a sieve make an exceptionally good marmalade, so far as both flavor and color are concerned. No other fruit need be used with the quinces, as they have enough flavor in themselves.

QUINCE MARMALADE

4 qt. quartered quinces
1 qt. hot water
4 lb. sugar

Wipe the fuzz from the quinces, wash, quarter, and remove the cores, but do not peel. Put over the fire in a preserving kettle with the water. Cook until the quinces are soft, remove from the fire, and mash through a sieve. Add the sugar to the quince pulp, replace on the fire, and cook until the mixture is thick, stirring constantly to prevent burning. Pour into hot sterilized glasses, cool, seal, and label.

73. GRAPE MARMALADE.--The pulp and skins of grapes are especially satisfactory for marmalade. In fact, most persons who are fond of grapes find marmalade of this kind very appetizing.

GRAPE MARMALADE

4 qt. stemmed grapes
2 c. hot water
3 lb. sugar

Separate the pulp of the grapes from the skins, put it into a preserving kettle with the water, and heat to the boiling point. Cook slowly until the seeds can be separated from the pulp, and then remove the seeds by pressing the pulp through a sieve. Return to the preserving kettle with the grape skins. Add the sugar, and cook the mixture slowly until it is thick, stirring constantly to prevent scorching. Care must be taken not to cook it too long, as the marmalade becomes quite stiff. Pour into hot, sterilized glasses, cool, seal, and label.

74. ORANGE-AND-PINEAPPLE MARMALADE.--No better combination can be secured than oranges and pineapple. To make marmalade, both fruits are cut into small pieces and then cooked in a thick sirup.

ORANGE-AND-PINEAPPLE MARMALADE

8 oranges
2 c. hot water
2 pineapples
4 lb. sugar

Wash the oranges, cut skins and all into small pieces, remove the seeds, and boil slowly in the water until the skins are soft. Prepare the pineapples by peeling them, removing the eyes, and then shredding or cutting into very small pieces. Add the pineapple to the orange, stir in sugar, and continue to boil until the juice is at the jelly stage. Pour into hot sterilized glasses, cool, seal, and label.

JAMS

75. JAM is similar to preserves, except that the fruit used is made into

a pulp before it is cooked with the sugar or after a part of the cooking is done. As a rule, only whole small fruits are used for jams, but the larger fruits can be utilized for this purpose by being cut fine and made into a pulp. When small fruits are used, part or all of the seeds are sometimes removed, but generally the seeds are allowed to remain if they are not too large. Jam is made thick by long boiling, and when done is usually quite smooth. A precaution, however, that should always be taken is not to cook it too long, for jam is very unappetizing if it is too thick.

Fruit may be purchased purposely for jam, but for the most part, this form of preserve is made of imperfect or very ripe fruits that are not suitable for canning, preserves, and other processes that require almost perfect fruit. If this point is kept in mind, it will be possible, during the canning season, to make into a delicious jam fruit that would otherwise be wasted.

76. STRAWBERRY JAM.--As strawberries have very small seeds, this fruit makes an excellent jam.

STRAWBERRY JAM

4 qt. strawberries
2 lb. sugar

Wash and hull the strawberries. Then mash them in a preserving kettle and add the sugar to them. Place over the fire, and boil slowly until the mixture becomes thick, stirring frequently to prevent the jam from sticking to the kettle and scorching. When the jam is cooked to the proper consistency, the juice should test as for jelly. Pour the mixture into hot sterilized glasses, cool, and then seal and label.

77. RASPBERRY JAM.--Both red and black raspberries are much used for jam. Some persons like to remove the seeds from raspberry jam, but as very little pulp remains after the seeds are taken out, this plan is not recommended.

RASPBERRY JAM

4 qt. raspberries
2 lb. sugar

Look over the raspberries carefully and then wash. Put them into a preserving kettle with the sugar. Heat to the boiling point, and cook slowly for a few minutes. Then mash the berries to a pulp, and continue to cook until the mixture thickens and the juice tests as for jelly. Pour into hot sterilized jars, cool, seal, and label.

78. GREEN-GAGE JAM.--Green gages make a smooth, tart jam that appeals to most persons. The seeds of the plums are, of course, removed, but the skins are allowed to remain in the jam.

GREEN-GAGE JAM

4 qt. green-gage plums
4 lb. sugar
1-1/2 c. hot water

Wash the plums, cut them in half, and remove the seeds, but not the skins. Dissolve the sugar in the water over the fire, and when it comes to the boiling point, add the plums. Cook slowly until the plums are mushy and the entire mixture is thick. Pour into sterilized glasses, cool, seal, and label. If sweet plums are used, decrease the quantity of sugar.

79. GOOSEBERRY JAM.--When gooseberries are well ripened, they make very good jam. As this fruit is rather tart, considerable sugar must be used if a sweet jam is desired.

GOOSEBERRY JAM

4 qt. gooseberries
3 lb. sugar

Remove the stems and blossom ends from the gooseberries and wash thoroughly. Add the sugar to the berries in a preserving kettle. Bring to a rapid boil, cook for a few minutes, and then mash the berries to a pulp. Cook until the mixture thickens and tests as for jelly. Pour into hot sterilized glasses, cool, seal, and label.

80. BLACKBERRY JAM.--Probably no jam is so well liked as that made from blackberries. Some varieties of these are large in size and contain considerable pulp in proportion to seeds. These are especially suitable for jam.

BLACKBERRY JAM

4 qt. blackberries
1/2 c. hot water
2 lb. sugar

Wash the berries thoroughly, and put them over the fire with the water. Bring to the boiling point, and boil slowly for a few minutes. Then mash the berries, add the sugar, and cook the mixture until, when tested, it is of a jelly-like consistency. Pour into hot, sterilized glasses, cool, and label.

BUTTERS

81. FRUIT BUTTERS are a form of preserves similar to jams, and are used in the place of preserves, jams, conserves, or marmalades. The fruit used for this purpose, which may be either large or small, is usually very ripe and somewhat soft. Therefore, as in the case of jams, imperfect fruits that are not suitable for other purposes can be used very well for butters.

Butters made from fruits differ from jams in that both the skins and seeds are always removed. The completed mixture is smooth and thick, having been made thick by long boiling and evaporation, rather than by the addition of large quantities of sugar. In fact, less sugar is used for butters proportionately than for any other preserved fruit. Spices are generally used in butters, so that the mixture is very highly flavored.

To prevent butters from scorching, they should be stirred constantly for a long period of time. This stirring becomes very tiresome, but it should not be stopped or the mixture is certain to scorch. If they are properly cooked, butters keep well with very little care in storage. Crocks are generally used for the storage of butters, but glasses or jars may be substituted.

82. APPLE BUTTER.--Apples are very often made into butter, but for this purpose sour apples that will cook soft should be selected. If the procedure explained in the accompanying recipe is followed, very good results may be expected.

APPLE BUTTER

4 qt. apples
8 qt. cider
1 lb. sugar
3 tsp. cinnamon
1 tsp. cloves
1 tsp. allspice

Peel the apples and quarter them. Boil the cider until it is reduced half. Add the apples to the cider, and cook slowly for about 3 hours, or until they are mushy, stirring constantly with a wooden spoon to prevent the apples from sticking to the bottom of the kettle. At the end of this time, the mixture should be thick and smooth and dark in color. If it gets too thick, more cider can be added. About 1 hour before the cooking is completed, add the sugar and the spices. Even greater care must be exercised from this time on to prevent scorching. If, after cooking 3 hours, the mixture is not sufficiently thick, continue to cook until more of the moisture is evaporated. Have hot sterilized glasses or crocks ready, fill them with the butter, cool, and seal.

83. PEACH BUTTER.--Peaches are especially satisfactory when made into butter. This fruit does not require such long cooking as apples, as will be seen in the accompanying recipe.

PEACH BUTTER

4 qt. peaches
1 c. hot water
1 lb. sugar
1 tsp. cinnamon
1/2 tsp. cloves

Wash the peaches, rub them to remove the fuzz, cut them in half, and take out the seeds. Measure the peaches and put them with the water into the preserving kettle, bring them to a boil, and cook until they are thoroughly softened. Then press them through a sieve or a colander, return the pulp to the preserving kettle, and add the sugar and the spices. Cook slowly for 1 or 2 hours, or until it has become a rich dark, clear color. Pour the butter into hot sterilized glasses or crocks, cool, and seal.

84. PEAR BUTTER.--An appetizing fruit butter can be made from pears in the same way that peach butter is made.

PEAR BUTTER

4 qt. pears, quartered
2 c. hot water
1 lb. sugar
2 tsp. cinnamon
1 tsp. cloves

Wash, cut, and core the pears, but do not peel them. Cut them into quarters, and put the quarters into a preserving kettle with the water. Bring to the boiling point, and boil until soft or mushy. Remove from the kettle and force through a sieve or a colander. To the pulp, add the sugar and spices, return to the kettle, and cook slowly for about 2 hours, stirring constantly to prevent scorching. If 2 hours is not sufficient to cook the mixture dry, cook a little longer. Pour into hot sterilized glasses or jars, cool, and seal.

85. PLUM BUTTER.--Another very good way in which to preserve plums for future use is to make butter of them. The accompanying recipe explains the correct procedure for butter of this kind.

PLUM BUTTER

4 qt. plums
1 c. hot water
3 lb. sugar
2 tsp. cinnamon
1/2 tsp. cloves

Wash the plums, cut them in half, and remove the seeds. Put the plums with the water into a preserving kettle, and boil until they are soft. Press them through a sieve or a colander, return to the preserving kettle, and add the sugar and spices. Boil until the mixture is thick and jelly-like, stirring constantly to prevent scorching. Pour into hot sterilized crocks or glasses, cool, and seal. If very sour plums are used, increase the amount of sugar.

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PICKLING

PRINCIPLES OF PICKLING

86. PICKLING consists in preserving fruits and vegetables in vinegar or brine. Each of these liquids acts as a preservative, so that the receptacles, or containers, for the food do not have to be sealed air-tight, nor does the preserved food require much care in order to have it keep perfectly.

The effect of the pickling liquids on both fruits and vegetables is very similar. The salt in the brine or the vinegar hardens the cellulose of the foods to such an extent that they are impervious to the action of bacteria. While this permits the foods to keep well, it also makes them difficult to digest, a fact that must be remembered when pickled foods are included in the diet.

87. The procedure in pickling is simple. After the fruit or vegetable is cleaned and prepared in the way desired, it is merely a matter of placing the food in sterilized jars or crocks, pouring the hot preserving liquid over it, allowing it to cool, and then storing it. In some cases the food is cooked, and in others it is not. As a rule, spices of some kind or other are added, both to aid in preserving and to impart flavor.

88. Practically all large fruits and many vegetables are pickled, as is shown in the recipes that follow. Foods preserved by pickling are known as either _pickles_ or _relishes_. While both products are similar in many respects, relishes are distinguished from pickles in that, as a rule, they are made up from more than one kind of fruit or vegetable and usually the pieces are cut or chopped and not put up whole. Often the foods in relishes are chopped or cut so fine as to make it almost impossible to tell what the fruit or vegetable was originally.

The food value of both these products is not extremely high, unless a great quantity of sugar is used in the pickling. This is sometimes the case with pickled peaches or pears, but seldom if ever with pickled vegetables.

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RECIPES FOR PICKLING

PICKLES

89. SMALL CUCUMBER PICKLES.--Perhaps the most common pickles are small cucumbers pickled according to the accompanying recipe. Such pickles meet with favor and serve very well as appetizers. The cucumbers selected should be small, so that they will be solid all the way through.

SMALL CUCUMBER PICKLES

1 gal. water
4 c. coarse salt
200 small cucumbers
1/2 gal. vinegar
1-1/2 tsp. celery seed
1 lb. light-brown sugar
1/2 tsp. mustard seed
1 tsp. salt
1 oz. stick cinnamon
1 tsp. whole cloves

Make a brine of the water and the coarse salt, pour it over the cucumbers, and allow them to stand for 24 hours. At the end of this time, pour off the brine, wash the pickles in cold water, and place them into crocks. Heat the vinegar, add the celery seed, sugar, mustard seed, salt, cinnamon, and cloves, and bring the mixture to the boiling point. Pour this over the pickles in the crocks, cover closely while hot, and place in storage. If the pickles are desired sweet, add more brown sugar to the mixture.

90. SLICED-CUCUMBER PICKLES.--Large cucumbers cut into slices may be pickled in practically the same way as small cucumbers. At times, when small cucumbers are hard to get, large cucumbers will take their place very well. In fact, some housewives prefer sliced cucumber pickles to the small ones.

SLICED-CUCUMBER PICKLES

1 gal. sliced cucumbers
1 c. coarse salt
1-1/2 qt. vinegar
1 pt. water
1 tsp. pepper
3 tsp. mustard
1 tsp. cinnamon
1 tsp. cloves
4 onions, chopped
1 c. brown sugar
1 Tb. salt

Select rather large cucumbers. Wash and peel them and cut into 1/4-inch slices. Sprinkle well with salt, and mix the salt among the layers of cucumbers. Allow this to stand for 24 hours; then drain and wash in clear cold water. To the vinegar and water add the spices, onion, sugar, and salt. Heat this to the boiling point, pour over the sliced cucumbers, and pack them into jars or crocks. Seal while hot and store.

91. CUCUMBERS IN BRINE.--Cucumbers may also be preserved in brine, stored, and pickled in vinegar later in any quantity, as desired.

Pour 1 gallon of boiling water over 4 cupfuls of coarse salt. This should make brine that is heavy enough to support an egg. Wash cucumbers

of any desired size, put them into a sterilized crock, in layers, and pour the brine, which has been allowed to cool, over the cucumbers until they are entirely covered. Cover the top of the crock well and store. Cucumbers preserved in this way may be taken from the brine at any time and pickled. To do this, soak them in fresh water to remove the salty taste. The fresh water may have to be poured off and replaced several times. After they have been freshened sufficiently, pickle them in vinegar and season them in any desirable way.

92. PICKLED BEANS.--String beans that are pickled make a good relish to serve with meals. Unlike cucumbers that are pickled, the beans are cooked before the preserving liquid is added. The accompanying recipe is for either wax or green beans.

PICKLED BEANS

4 qt. beans
1-1/2 qt. vinegar
1 c. brown sugar
1 tsp. salt
1/2 tsp. pepper
1 tsp. allspice
1 tsp. cinnamon
1 tsp. cloves

Select large, firm, tender wax or green beans. Cover them with water to which has been added 1 level teaspoonful of salt to each quart and put them over the fire to cook. Boil the beans until they can be pierced with a fork, remove from the fire, drain, and pack into jars or crocks. To the vinegar add the sugar, salt, and spices. Bring this mixture to the boiling point, and pour it over the beans in the jars or crocks, filling them completely or covering the beans well. Close tight and store.

93. PICKLED BEETS.--Pickled beets meet with much favor as a relish. Like pickled beans, they must be cooked before they can be pickled; also, unless they are very small, they should be sliced before pickling as the recipe points out.

PICKLED BEETS

4 qt. red beets
2 qt. vinegar
2 c. brown sugar
1 tsp. salt
1/2 tsp. pepper
1 tsp. cinnamon
1 tsp. cloves
1 tsp. allspice

Cut the tops from the red beets, leaving 1 inch of the stems and the roots attached. Scrub well with a vegetable brush, and put to cook in boiling water. Cook until the beets are tender enough to be pierced with

a fork. Pour off the hot water and run cold water over them. Remove the roots and stems, and cut into slices of any desired thickness or into dice, if preferred. Pack into jars or crocks. Then bring the vinegar to a boil, and to it add the sugar, salt, and spices. Pour this hot mixture over the beets. Seal the beets while hot, cool, and store.

94. PICKLED CAULIFLOWER.--Cauliflower is another vegetable that lends itself well to pickling. This food must be cooked, too, before pickling; and to have it just right for packing into the containers, it requires particular attention in cooking.

PICKLED CAULIFLOWER

4 qt. cauliflower broken into pieces
2 c. brown sugar
1 Tb. salt
1/2 tsp. pepper
1 qt. vinegar
1 pt. water

Select firm heads of cauliflower and break them into sections or flowerets. Immerse these in cold water to which has been added 1 teaspoonful of salt to the quart. Allow the cauliflower to stand for 1 hour in the salt water. Remove from the water, and put over the fire to cook in salt water of the same proportion as that used for soaking. Cook until the cauliflower is quite tender, but not so tender as it would be cooked to serve at the table. If this is done, the cauliflower will darken and break into pieces. It should be firm enough not to crush or break easily when it is packed into the jars. When properly cooked, pack closely into jars, add the sugar, salt, and pepper to the vinegar and water, heat to the boiling point, and pour this liquid over the cauliflower, completely covering it. Seal while hot, allow to cool, and store.

95. PICKLED ONIONS.--Pickled onions are well liked by many. For pickling purposes, medium small onions of uniform size are most suitable. Owing to their nature, onions cannot be pickled so quickly as some of the vegetables mentioned, but, otherwise, the work is done in practically the same way.

PICKLED ONIONS

4 qt. onions
2 qt. spiced vinegar

Select onions that are as nearly the same size as possible. Peel them and let them stand in fresh water for 24 hours. Pour off this water, and over the onions pour a brine made by adding 2 cupfuls of salt to each gallon of water. Allow them to stand in this brine for 3 days, changing the brine once during this time. Remove the onions from the brine, and freshen in cold water for 2 hours. Drain the onions and cook them in the spiced vinegar for 1/2 hour. Any of the spiced vinegars given for the other vegetables may be used. After cooking, pack the onions with the

liquid into jars, seal, cool, and store.

96. PICKLED PEACHES.--Among the fruits that may be pickled, peaches seem to meet with great favor. They, as well as pickled pears and pickled crab apples, make a relish that adds variety to the foods that are served in the home from day to day. The pickling process does not differ materially from that applied to vegetables, as the accompanying recipe shows.

PICKLED PEACHES

2 lb. brown sugar
1 qt. vinegar
1 oz. stick cinnamon
4 qt. peaches
2 Tb. cloves

Boil the sugar, vinegar, and cinnamon together until they begin to look sirupy. Wash the peaches and rub off the fuzz. Stick one or two cloves into each peach, and drop the peaches into the sirup. Cook them until they may be easily pierced with a fork. Put them into jars, pour the sirup over them, filling each jar, and seal while hot. Allow the jars to cool and store. The peaches may be peeled if desired. It may also be more convenient to cook only part of the peaches in the sirup at one time, cooking the remainder after these have been taken out and put into jars.

97. PICKLED PEARS.--Pears also lend themselves readily to pickling. Specific directions are not given here, because they are pickled in exactly the same way as peaches. The pears may be peeled or not, as desired.

98. PICKLED CRAB APPLES.--Crab apples that are to be pickled should preferably be of a large variety. The directions given for pickling peaches apply also to this fruit. The crab apples should be examined carefully to make certain that they contain no worms. Also, the stems should be left on, and they should be washed thoroughly with the blossom ends cut out.

RELISHES

99. MUSTARD PICKLES.--Among the relishes, mustard pickles are very popular. This relish is made up of a large number of vegetables, namely, cucumbers, string beans, green peppers, red sweet peppers, onions, green tomatoes, cauliflower, and green Lima beans.

MUSTARD PICKLES

1 pt. small cucumbers
1 qt. string beans
4 green peppers
4 red sweet peppers

1 pt. small onions
1 pt. green tomatoes
1 pt. cauliflower
1 c. green Lima beans
3/4 c. flour
2 c. sugar
4 Tb. powdered mustard
2 tsp. tumeric
1 Tb. celery seed
1 Tb. salt
1/2 tsp. pepper
1 qt. vinegar
1 pt. water

Wash all the vegetables and prepare them by cutting them into the desired sizes. The onions and cucumbers should be of a size that will not require cutting. Put all the vegetables together, cover them with salt water made by adding 1 cupful of salt to each 2 quarts of water, and allow them to stand in this for 24 hours. At the end of this time, drain off the brine and freshen the vegetables in clear water for about 2 hours. Mix the dry ingredients together, heat the vinegar and water, and pour it over all. Bring this mixture to the boiling point, and pour it over the vegetables. Fill the jars with the hot mixture, seal, cool, and store.

100. SPANISH RELISH.--Another satisfactory relish made up of a large number of vegetables and spices is Spanish relish. In its preparation, however, the vegetables are not chopped very fine.

SPANISH RELISH

12 green sweet peppers
12 red sweet peppers
12 medium-sized onions
12 green tomatoes
2 medium-sized heads of cabbage
1 tsp. salt
1 lb. brown sugar
1/2 tsp. black pepper
1/4 tsp. Cayenne pepper
1 Tb. mustard seed
1 tsp. celery seed
1-1/2 qt. vinegar

Wash the vegetables and chop them into coarse pieces. Cover them with salt water made by adding 1 cupful of salt to a gallon of water and allow them to stand in this brine for 6 to 8 hours. At the end of this time, drain off the salt water and wash with clear water. Add the salt, sugar, and spices to the vinegar, and bring this mixture to the boiling point. Then pour it over the mixture of vegetables, pack all into sterilized crocks or jars, seal, cool, and store.

101. CHOW CHOW.--Still another relish in which a variety of vegetables

is used is chow chow. This relish is well and favorably known to housewives for the zest it imparts to meals.

CHOW CHOW

2 qt. small green tomatoes
6 green peppers
6 red peppers
1 small head of cabbage
2 bunches celery
1 pt. small onions
1 qt. small cucumbers
3 qt. vinegar
1 Tb. salt
2 c. brown sugar
1/2 tsp. black pepper
2 Tb. mustard seed
2 Tb. tumeric
2 Tb. allspice
1 Tb. cloves
1 Tb. cinnamon

Wash the vegetables and cut them into very small pieces. Cover them with salt water made by adding 1 cupful of salt to a gallon of water, and let them stand in this for 6 to 8 hours. Drain at the end of this time, and wash with cold water. Heat the vinegar, and to it add the salt, sugar, and spices. Add this to the vegetables and cook until they are soft. Pack into sterilized jars, seal while hot, cool, and store.

102. BEET RELISH.--A relish in which cooked beets are the principal ingredient may be made up from the accompanying recipe. As pickled beets in any form are usually well liked, this relish may be put up for the variety it offers.

BEET RELISH

1 qt. cooked beets, chopped
1 c. horseradish root, grated
1 c. vinegar
1 Tb. salt
1/2 c. sugar
1 tsp. cinnamon
1 tsp. cloves

Cook the beets in the usual way. When they are tender, remove the skins and chop quite fine. Add the grated horseradish to the beets. To the vinegar, add the salt, sugar, and spices and heat to the boiling point. Pour this mixture over the vegetable mixture, pack all into hot sterilized jars, seal, cool, and store.

103. CHILLI SAUCE.--Chilli sauce is a well-known relish in which ripe tomatoes, red or green peppers, and onions are combined with spices and vinegar. Although not so many vegetables are used in this relish as in

those which precede, it merits a place among the canned foods prepared for future use.

CHILLI SAUCE

2 qt. medium-sized ripe tomatoes
2 red or green peppers, finely chopped
2 onions, finely chopped
2 c. vinegar
1/2 c. sugar
1 Tb. salt
1 tsp. ground cloves
2 tsp. ground cinnamon
2 tsp. celery salt

Blanch the tomatoes in boiling water until the skins loosen. Then remove the skins and stem ends, chop the tomatoes, and put them into a preserving kettle with the chopped peppers and chopped onions. Heat gradually to the boiling point, add the vinegar, sugar, salt, and spices, and cook slowly until the mixture is quite thick. This will require from 2 to 3 hours. Then put the hot sauce into sterilized bottles or jars, seal, allow them to cool, and store.

104. GREEN-TOMATO PICKLE.--A pleasing relish may be made from green tomatoes after the frost has come in the fall and tomatoes on the vines will not mature.

GREEN-TOMATO PICKLE

3 qt. green tomatoes, sliced
2 qt. onions, sliced
1 qt. vinegar
1 pt. water
1 Tb. salt
1-1/2 lb. brown sugar
2 Tb. cinnamon
2 tsp. cloves
2 tsp. allspice
3 Tb. celery salt
1 Tb. mustard seed

Select firm green tomatoes, wash them, and slice them. Peel the onions, and slice them into slices of the same thickness as the tomatoes, about 1/4 inch being perhaps the most desirable. Mix the tomatoes and onions, sprinkle them generously with salt, and allow them to stand for 24 hours. At the end of this time, pour off any excess liquid; then pour a small quantity of fresh water over them, and drain this off, also. To the vinegar and water, add the salt, sugar, and spices. Heat this mixture to the boiling point, pour it over the mixture of tomatoes and onions, and put into jars. Seal the jars while hot, allow them to cool, and then store.

105. RIPE-TOMATO PICKLE.--Ripe tomatoes form the basis of another relish

known as ripe-tomato pickle. Like other relishes in which tomatoes are used, this relish is very satisfactory for meals in which pickles or relishes may be served.

RIPE-TOMATO PICKLE

2 qt. ripe tomatoes
2 bunches celery
3 red sweet peppers
3 medium-sized onions
1 qt. vinegar
1 Tb. salt
1 c. sugar
1 Tb. mustard seed
1 Tb. ground cloves
1 Tb. ground cinnamon

Blanch the tomatoes until the skins loosen, and then peel them. Remove the stem ends, and cut the tomatoes into quite large pieces. Chop the celery, peppers, and onions coarsely. Cook together until they are almost tender. Pour off the water. Mix all the vegetables together, and pack them into a sterilized stone jar. To the vinegar, add the salt, sugar and spices. Boil and pour this mixture over the vegetables in the stone jar, cover, and allow this to stand at least 2 weeks before using.

106. TOMATO CATSUP.--As a condiment to be served with meats, oysters, fish, baked beans, and other foods high in protein, catsup finds considerable use. This relish, which is also called _catchup_ and _ketchup_, may be made from both vegetables and fruits, but that made from tomatoes seems to be the most desirable to the majority.

TOMATO CATSUP

1/2 bu. ripe tomatoes
1/2 c. salt
1 lb. brown sugar
2 qt. vinegar
1 Tb. ground cinnamon
1 tsp. Cayenne pepper
2 Tb. celery salt
2 tsp. ground cloves

Remove the skins from the tomatoes by blanching and cut out the stem ends. Then slice the tomatoes, put them into a preserving kettle over the fire, cook them until they are soft, and force them through a sieve to remove the seeds. Return the pulp to the preserving kettle, add the salt, sugar, vinegar, and spices, and cook the mixture until it is reduced at least half in quantity. Pour into sterilized bottles, seal, cool, and store.

107. GRAPE CATSUP.--Perhaps the best-known catsup made from fruit is grape catsup. Its uses are practically the same as those of tomato catsup, and it is made in much the same way.

GRAPE CATSUP

4 qt. Concord grapes
3 c. vinegar
1 lb. brown sugar
2 Tb. cinnamon
1 tsp. cloves
1 tsp. allspice

Put the grapes to cook with the vinegar. When they have cooked soft enough, press through a sieve to remove the seeds and skins. Add the sugar and spices, and cook until the mixture is rather thick. Stir constantly to prevent scorching. Pour into sterilized bottles, seal, cool, and store.

108. PICKLED WATERMELON RIND.--An unusual, though highly satisfactory, relish may be made from the rind of melons. The accompanying recipe is for pickled watermelon rind, but if desired muskmelon rind may be substituted. In either case, only the white part of the rind should be used.

PICKLED WATERMELON RIND

4 qt. watermelon rind cut into strips or cubes
1 oz. stick cinnamon
1 Tb. cloves
1 c. water
3 lb. sugar
1 qt. vinegar

Prepare the rind by cutting off the green skin and all the pink flesh on the inside. Cut this rind into strips 1 inch wide and 1 inch thick, and then into cubes, if desired. Cook in water until the rind may be easily pierced with a fork. Add the spices, water, and sugar to the vinegar, and boil until it becomes sirupy. Add to this sirup the cooked watermelon rind and bring to the boiling point. Then pack into sterilized jars, seal, cool, and store.

109. CRAB-APPLE RELISH.--Among the fruits, crab apples lend themselves best to the making of relish. By the addition of oranges, raisins, and spices, as in this recipe, crab-apple relish is made very desirable and agreeable to the taste.

CRAB-APPLE RELISH

4 qt. crab apples
3 c. vinegar
4 oranges
4 lb. brown sugar
2 lb. Sultana raisins
1 Tb. powdered cinnamon
1 tsp. cloves

1 tsp. allspice

Wash the crab apples, remove the cores, and cut the apples into small pieces. Put them into a preserving kettle, add the vinegar, the oranges, peeled and sliced, the sugar, the raisins, and the spices. Cook all slowly until the apples are soft. Pour into sterilized jars or glasses, seal, cool, and store.

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JELLY MAKING, PRESERVING, AND PICKLING

EXAMINATION QUESTIONS

(1) (_a_) Give three reasons why the making and use of jelly has value. (_b_) When are pickles permissible in the diet?

(2) What is necessary for the making of good jelly?

(3) Mention some important points to consider in selecting fruit for jelly making.

(4) (_a_) What is pectin? (_b_) Why are ripe fruits not so satisfactory for jelly making as partly green ones?

(5) Give the test for pectin.

(6) How may jelly be made from fruit juices that do not contain pectin?

(7) Give the best method of extracting fruit juice for jelly.

(8) What material is best for jelly bags? Why?

(9) What is the general proportion of sugar and juice for making: (_a_) jelly from very sour fruits? (_b_) jelly from slightly sour fruits?

(10) Give the method for making jelly by the mean-boiling method.

(11) What is meant by: (_a_) short boiling? (_b_) long boiling?

(12) Give two tests for determining when jelly has cooked sufficiently.

(13) (_a_) How should glasses be prepared before filling them with jelly? (_b_) How are glasses closed for storing?

(14) (_a_) What are preserves? (_b_) What kind of fruits should be selected for preserves?

(15) Describe the best method of making preserves.

(16) How do conserves differ from preserves?

(17) How do marmalades differ from conserves?

(18) Describe jam.

(19) How does fruit butter differ from jams?

(20) What are: (_a_) pickles? (_b_) relishes?

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CONFECTIONS

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NATURE AND COMPOSITION

NATURE OF CONFECTIONS

1. CONFECTIONS are such sweetmeats as candy and similar articles, which have for their foundation sugar, sirup, honey, and the like. As is well known, the most important variety of confection is candy, and this is the one that is usually meant when the term confections is mentioned. Confections, however, are not so limited as might be imagined upon first thought, for many delicious dishes whose main ingredient is nuts, fruits, coconut, or pop corn are also placed in this class. To be sure, most of these contain sweetening material of some sort in greater or smaller quantities. Therefore, in its broadest sense, confections may be regarded as preparations having for their chief ingredient sugar or substances containing it, such as molasses, honey, etc., usually mixed with other food materials, such as nuts, fruits, chocolate, starches, and fats, to give them body and consistency, and flavored and colored in any desired way.

2. The making of confections, and of candy in particular, is both a useful and a delightful pastime that can be indulged in even by those who are only slightly skilled. In fact, with a certain amount of knowledge of the methods used and a little practice, surprising results can be obtained by the amateur candy maker. Then, too, it is a comparatively simple matter to copy the confectioner's work. A considerable variety of candies can often be made from a simple foundation material if a little originality or ingenuity is applied.

Since it is an easy matter to prepare foods of this kind and since they can be made at home more cheaply and of more tasty and wholesome materials, it is a decided advantage to make them rather than buy them, particularly if they are used extensively in the home. However, not so much fear need be felt now as formerly with regard to commercially made candies, for much has been done in recent years to compel the use of wholesome materials in candies, especially the cheaper ones that children are apt to buy. The pure-food laws require that no such adulterants as are not food materials and no harmful flavorings,

colorings, nor alcoholic beverages be used in making confections. As can well be understood, this is a valuable protection. Consequently, at the present time, the harm, if any, resulting from eating candy comes from either the excessive or the wrong use of it.

3. The taste for confections of all kinds is one that is acquired, and it is often developed to harmful extremes. Therefore, these foods, like most others, should be indulged in only in moderation. They will then prove not only valuable, but entirely unharmful. The greatest precaution that should be observed in their use is in giving them to children. Very young children should not have candy at all, it being much too concentrated for digestive organs that are used to handling only diluted food materials. As they grow older and their diet begins to include more foods, a small quantity of wholesome sweets will not be harmful if it is given at meal time. Adults with normal digestion may eat a reasonable amount of candy and other confections without injury.

4. To assist in the making of confections in the home, the principles of candy making, as well as those which must be understood for the making of such other foods as are commonly called confections, are given in this Section. In addition, there are included explicit directions for the making of simple candies and confections and of some of the varieties that are more difficult to make. The various operations are not hard to perform, and good results may be expected if each step is carried out as directed. The operations requiring skill and dexterity, such as the coating of bonbons and chocolates, must be repeated several times if results that approach those of the professional confectioner are to be attained. Still, surprisingly good results may be obtained the first time the work is done if directions are followed explicitly.

COMPOSITION OF CONFECTIONS

5. CARBOHYDRATE IN CONFECTIONS.--So far as their composition is concerned, confections are largely carbohydrate in the form of sugar. This food material may be one of several different varieties. As is well understood, the high percentage of carbohydrate, which in some cases may be very close to 100 per cent., greatly increases the food value of this variety of foods. Where the percentage is very high, the candies are necessarily hard, for all or nearly all the moisture is driven off in the making. In this case, as in other foods, the more water there is present, the more reduced is the total food value.

6. FAT IN CONFECTIONS.--To a certain extent, fat is found in these high-carbohydrate foods. It is supplied largely by the use of milk, condensed milk, cream, butter or butter substitutes, nuts, and chocolate. While these materials are usually added to produce a certain flavor or consistency, they form at the same time an ingredient that greatly increases the food value of the finished product.

7. PROTEIN IN CONFECTIONS.--Protein is not found extensively in confections unless nuts, chocolate, milk, or other foods containing it are used in their preparation. But, even then, sweets are usually eaten

in such small quantities that the protein in them does not figure to any great extent, so that, at best, confections are not considered as a source of protein at any time. However, chocolate-coated nuts, as will readily be seen, are a rather high-protein food.

8. MINERAL SALTS IN CONFECTIONS.--Refined sugar does not contain mineral salts, so that unless other ingredients containing this food substance are added, no mineral salts will be present in confections. It is true that some of the ingredients used, such as milk, fruits, nuts, molasses, honey, maple sirup, etc., contain certain minerals; but just as confections are not taken as a source of protein, so they are not characterized by the minerals in them.

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CONFECTION MAKING

INGREDIENTS USED IN CONFECTIONS

FOUNDATION MATERIALS

9. SUGAR.--The most important ingredient used in the making of confections is sugar. It is therefore well that the nature of this ingredient be thoroughly understood. Its chief commercial varieties are _cane sugar_ and _beet sugar_, both of which produce the same results in cookery operations. When sugar is mentioned as an ingredient, plain granulated sugar is meant unless it is otherwise stated. Whether this is cane or beet sugar makes no difference. The fineness and the color of sugar are due to its refinement and the manufacturing processes through which it is put, and these are indicated by various terms and trade names, such as _granulated, pulverized_, and _soft_ sugars.

The grading of granulated sugar is based on the size of its crystals, this sugar coming in three qualities. The coarsest is known as _coarse granulated_; the next finer, as _standard granulated_; and the finest, as _fine granulated_. There is also a fourth grade known as _fancy fine_, or _extra-fine, granulated_, and often called _fruit_, or _berry, sugar_.

10. So far as candy is concerned, the coarseness of the sugar does not make a great deal of difference, although the finer sugars are perhaps a little better because they dissolve more quickly in the liquid and are a trifle less likely to crystallize after cooking. When sugar is to be used without cooking, however, its fineness makes a decided difference. Sugars finer than granulated are known as _pulverized sugars_ and are made by grinding granulated sugar in a mill that crushes the crystals. These pulverized sugars are known on the market as _coarse powdered, standard powdered_, and _XXXX powdered_, the last being the one that should always be purchased for the making of confectionery where the use of uncooked sugar is required. One of the chief characteristics of sugars of this kind is that they lump to a great extent, the finer the sugar the larger and harder being the lumps. Before sugar that has

become lumpy can be used, it must be reduced to its original condition by crushing the lumps with a rolling pin and then sifting the sugar through a fine wire sieve. As explained in _Cakes, Cookies, and Puddings_, Part 1, sugars of this kind are not suitable for cooking purposes, such as the preparation of cooked icings, etc. These are made from granulated or other coarse sugar, while the uncooked ones are made from XXXX, or _confectioners', sugar_, as it is sometimes called. Then, too, fine sugars cost more than do the granulated sugars, so it is well to remember that nothing is gained by their use.

11. The third variety of sugars, which are known as _soft sugars_, are purchased by the retail dealer by number. There are fifteen grades of this sugar, ranging from 1 to 15, and the number indicates the color of the sugar. No. 1 is practically white, while No. 15 is very dark, and the intervening numbers vary in color between these two shades. The lightness of the color indicates the amount of refinement the sugars have had. The dark-brown sugars are stronger in flavor and indicate less refinement than the light ones. When brown sugar is required for any purpose, it is usually advisable to use one of the lighter shades, because they are more agreeable in taste than the very dark ones.

12. MOLASSES.--The liquid that remains after most of the sugar has been refined out of the cane juice is known as molasses. The juice from beets does not produce molasses; therefore, all of the molasses found on the market is the product of cane juice. A molasses known as _sorghum molasses_ is made by boiling the sap of sorghum, which is a stout cereal grass, but this variety is seldom found on the general market, it being used locally where it is manufactured. The dark color and the characteristic flavor of molasses are due to the foreign materials that remain in the juice after the removal of the sugar. Molasses is not so sweet as sugar, but it is much used as an ingredient in the making of many delicious confections. As in the case of soft sugars, the lighter the molasses is in color, the more agreeable is the flavor of the confections made from it.

13. GLUCOSE.--Another substance much used in the making of confections is glucose. It is usually manufactured from the starch of corn and is put on the market under various trade names, but generally it is called _corn sirup_. Many persons have long considered glucose a harmful food, but this belief has been proved untrue. Glucose has come to be absolutely necessary in some candy making in order to produce certain results. The glucose that the confectioners use is a heavier, stickier substance than the sirups that can be purchased for table use or for cooking, but these do very well for most candy-making purposes. However, none of the glucose preparations are so sweet as sugar, maple sirup, or honey.

14. Glucose will not crystallize nor make a creamy substance; neither will it permit any substance that contains more than a very little of it to become creamy. A creamy candy containing a small amount of it will remain soft longer than that made without it; also, it will cream without danger of the formation of large crystals. Because of these characteristics, which are responsible for its use in candy making, a

mixture containing glucose will not "go to sugar." Taffy-like confections and clear candies contain a large proportion of glucose, while any that are intended to be creamy, such as bonbons and the centers for chocolates, have only a small amount, if any, glucose in them.

15. MAPLE SIRUP AND MAPLE SUGAR.--Maple sirup and maple sugar, because of their pleasing flavor, are used extensively for candy making. Maple sirup is, of course, the basis for maple sugar, for by boiling the sirup to evaporate the water and then stirring it, maple sugar results. When the sirup is used for candy making, it must be boiled, but it seldom requires any liquid other than that which it already contains. On the other hand, maple sugar requires liquid in some form, for it must first be dissolved in a liquid and then boiled with it.

16. HONEY.--Honey that has been pressed from the comb and is in the form of a heavy sirup is used in the making of various confections. It provides a delightful flavor much different from that of sugar, and when it is cooked it acts in much the same way as glucose.

FLAVORINGS

17. KINDS OF FLAVORINGS.--Flavorings are very important in the making of confections, for it is on them that much of the appetizing effect of these foods depends. In fact, unless good flavorings are secured and then used discreetly, tasty results cannot be expected.

The flavorings used in candy making are in reality divided into two classes--_natural_ and _artificial_.

18. NATURAL FLAVORINGS.--Under the head of natural flavorings come those which are made from the fruit or the plant that produces the desired flavor. They are known as _oils_ and _extracts_.

19. The oils are obtained by pressing out the natural flavoring substance from the material containing it. They are usually very strong, so that only a little is needed to flavor a comparatively large quantity of food. Peppermint, wintergreen, and cinnamon are the oils that are used the most.

20. EXTRACTS are prepared by using alcohol to extract the flavoring substances from certain materials. The alcohol acts as a preservative, so that the finished extract nearly always contains a high percentage of this material. Vanilla and such flavorings as lemon and orange are examples of extracts that are usually made in this way. A few companies manufacture a product in which glycerine instead of alcohol is used as the preservative. Flavorings so prepared are in the form of a thick, sirupy substance rather than a liquid and are usually sold in a tube.

21. ARTIFICIAL FLAVORINGS.--Flavorings classified as artificial flavorings are of two kinds: those having for their basis substances extracted from coal tar and those prepared by various chemical

combinations. They are also known as _synthetic flavors_. With regard to both healthfulness and taste, they are not so desirable as the natural flavorings.

22. ADULTERATION OF FLAVORINGS.--As it is a common practice to adulterate flavorings, every manufacturer of these materials is obliged to state on the label of each bottle or tube of flavoring just what its contents consist of. Therefore, when the purchase is made, the label should be carefully examined. Without doubt, vanilla is adulterated more often than any other flavoring, a pure extract of vanilla being seldom found. The beans from which the flavor is extracted are very expensive, so the Tonka bean and other cheaper flavoring substances are often resorted to in the making of this flavoring. However, when large amounts of such things are used, the price of the extract should be less than that charged for the pure extract of the vanilla bean. Many chefs and professional cooks overcome this difficulty by purchasing the vanilla beans and using them for flavoring purposes by soaking or cooking small pieces of them in the material that is to be flavored or grinding the bean in a mortar and using it in the ground form.

COLORINGS

23. COLORINGS are used in the making of confections, candy in particular, for two purposes: to make them attractive and to indicate certain flavors. For instance, candies flavored with wintergreen are usually colored pink, while those containing peppermint are colored pale green or are left white. Strawberry and rose flavors are also colored pink; orange and lemon, their respective shades of yellow; violet, lavender; and pistachio and almond, green.

24. The substances used for coloring confections are of two general classes: _vegetable_ and _mineral_, or _chemical_. The vegetable colorings, like the natural flavorings, are considered to be the most healthful ones. Some of the chemical colorings are derivatives of coal tar, just as are the coal-tar flavorings. Cochineal, a red color extracted from the bodies of cochineal insects, is a coloring matter much used in the preparation of confections. These coloring materials may be purchased in several forms. The ones most commonly used come in the form of liquid or paste, but frequently colorings are to be had in powder or tablet form.

25. Discretion must always be observed in the use of colorings. Because of their concentration, they must be greatly diluted and used in only very small amounts. As is well known, pale colors in candies are always more attractive than deep ones. Then, too, when candies contain much color, most persons are likely to consider them harmful to eat. To get the best results, only a little coloring should be added at a time, and each amount added should be mixed in thoroughly. Then the danger of getting too much coloring will be avoided. It should be remembered, however, that if colored candies are kept for any length of time or are exposed to the light, they will fade to a certain extent; consequently, these may be colored a little more deeply than those which are to be

used at once.

ACIDS

26. To prevent the creaming or the crystallizing of such candy as taffy, an acid of some kind is generally used with the cane sugar in the making of this variety of confection. The acid, upon being boiled with the sugar, changes a part of the cane sugar to invert sugar, and as this does not crystallize, the candy will not become sugary. A similar effect is obtained by adding glucose in sufficient amounts; since it does not crystallize, the cane sugar is prevented from becoming sugary.

27. The acids most commonly used for this purpose are cream of tartar, acetic acid, vinegar, which has acetic acid for its basis, and lemon juice, which has citric acid for its basis. With each pound of sugar, it will be necessary to use 1/8 teaspoonful of cream of tartar, 1 or 2 drops of acetic acid, or 1 tablespoonful of vinegar or lemon juice in order to prevent crystallization. Lemon juice and vinegar are much more likely to flavor the candy than are cream of tartar and acetic acid. Often, if a fine-grained creamy candy is desired, a small amount of one of these acids is used. Even in small quantities, they will prevent the coarse-grained crystallization that is the natural result of the cooking and stirring of the cane sugar when nothing is done to prevent it.

FOOD MATERIALS

28. In addition to the ingredients already mentioned, there are a number of materials that may be used in the making of candy to provide food value and at the same time give variety and improve the flavor and appearance of the candy. Chief among these materials are coconut, cocoa, chocolate, nuts, candied and dried fruits, milk, cream, butter, etc. Their value in candy depends on their use, so it is well to understand their nature and the methods of using them.

29. COCONUT.--Either shredded or ground coconut is often used in candy to give it flavor or variety. Coconut for this purpose may be secured in a number of forms. A coconut itself may be purchased, cracked open to remove the flesh, and then prepared either by grating it or by grinding it. This will be found to be very delicious and preferable to any other kind. However, if it is not desired to prepare the coconut in the home, this material may be purchased shredded in boxes or in cans. That which comes in boxes is usually somewhat dry and is often found to be quite hard. The canned varieties remain soft, since the shredded coconut is mixed with the milk of the coconut, but these have the disadvantage of not keeping very well. Any coconut that becomes too dry for use may be softened by steaming it.

30. COCOA AND CHOCOLATE.--In the making of confections, cocoa and chocolate are used extensively for both flavoring and coating. Either of them may be used for flavoring purposes, but chocolate is always preferable, because it has a richer, deeper flavor than cocoa. Bitter

chocolate should be used in preference to any kind of sweet chocolate. When it is to be cooked with candy for flavoring, it may be added to the other ingredients in pieces and allowed to melt during the cooking. It is often used without cooking, however, as when it is added to material that is to be used as centers for bonbons or opera creams. In such an event, it is first melted over steam or hot water and then worked into the candy.

31. When desired for coating, chocolate that is sweetened is usually employed, although many persons are fond of creams that have a bitter coating. Sometimes a bitter-sweet coating, that is, a slightly sweetened chocolate, is used, and for most purposes a coating of this kind is preferred. Such chocolate must usually be purchased from a store where confectioner's supplies are sold or from a candy-making establishment. Milk chocolate and very sweet coatings may also be purchased for coating, but the eating chocolate that is sold in bars will not produce satisfactory results, and so should never be used for coating purposes.

32. CANDIED AND DRIED FRUITS.--Many varieties of candied or crystallized fruits and flowers find a place in the making of confections. Sometimes they are used as an ingredient, while other times they are added to bonbons and chocolates merely for decorative purposes. Again, they are often used in boxes of fancy candies that are packed to sell at some special event or to give away. They are somewhat expensive to purchase, but if they are properly used they add such an appetizing touch and produce such gratifying and delightful results that the expenditure for them is well justified. Many of these may be prepared in the home with a certain degree of satisfaction.

33. The two candied fruits most frequently used are candied pineapple and candied cherries, but, in addition to these candied apricots, peaches, pears, limes, lemons, and oranges are often found in the market. Cherries preserved in maraschino wine and creme de menthe add attractive touches of color to candies and make delicious confections when coated with bonbon cream or chocolate.

34. Crystallized violets, rose petals, and mint leaves are used frequently in the preparation of confections. They are added merely for decoration and make very attractive candies. They can usually be purchased in confectionery stores.

35. Several varieties of dried fruits, chief among which are dates, figs, and raisins, are useful in the making of confections. They have the advantage of not requiring complicated manipulation, and at the same time they lend themselves to a number of delicious confections that may often be eaten by persons who cannot eat anything so rich as candy. Children can usually partake of confections made of these fruits without harm when candy would disagree with them.

36. NUTS.--Nuts of various kinds probably have more extensive use in the making of confections than any other class of foods. In fact, there are few kinds of candy that cannot be much improved by the addition of nuts. Halves of such nuts as English walnuts and pecans are frequently used by

being pressed into the outside of bonbons and chocolates. Then, too, pieces of various kinds of nuts are used with a filling for coated candies. Such nuts as almonds, filberts, walnuts, and peanuts are often covered singly or in clusters with the same chocolate coating that is used to coat creams. Pistachio nuts, which are light green in color, are either chopped or used in halves on chocolates or bonbons.

37. When nuts are not desired whole for confections, they should never be put through a food chopper; rather, they should always be broken up by being cut or chopped with a knife. The simplest way in which to cut them is to spread the nuts in a single layer on a board and then with a sharp knife press down on them, having one hand on the back of the knife near the point and the other on the handle and rocking the knife back and forth across the nuts until they are as fine as desired. They may also be chopped in a chopping bowl or cut one at a time with a small, sharp knife.

38. Salted nuts, while not a confection in the true sense of the word, are closely related to confections, since they are used for the same purpose. For this reason, it seems advisable to give the methods of preparing them in connection with the preparation of confections.

39. POP CORN.--An excellent confection and one that always appeals to children may be made from pop corn. This variety of Indian corn has small kernels with or without sharp points. To prepare it for confections; the kernels, or grains, are removed from the ears and then exposed to heat in a corn popper or a covered pan. When they become sufficiently hot, they pop, or explode; that is, they rupture their yellow coat and turn inside out. The popped kernels may be eaten in this form by merely being salted or they may be treated with various sugar preparations in the ways explained later.

40. MILK, CREAM, AND BUTTER.--Milk is extensively used in the making of candy, both to obtain a certain flavor and to secure a particular consistency. Skim milk may be used for this purpose, but the richer the milk, the better will be the flavor of the finished candy. Cream, of course, makes the most delicious candy, but as it is usually expensive, it greatly increases the cost of the confection. Butter may be used with milk to obtain a result similar to that secured by the use of cream. If skim milk is used, butter should by all means be added, for it greatly improves the flavor of the candy. In any recipe requiring milk, condensed or evaporated milk may be substituted with very satisfactory results. These milks may be diluted as much as is desired.

Besides providing flavor, milk, cream, and butter add food value to the confections in which they are used. Most of this is in the form of fat, a food substance that is not supplied by any other ingredients, except perhaps chocolate and nuts. They are therefore particularly valuable and should always be used properly in order that the most good may be derived from them.

41. The chief problem in the use of milk is to keep it from curding and, if curding takes place, to prevent the curds from settling and burning

during the boiling. When maple sirup, molasses, or other substances that are liable to curdle milk are to be cooked with the milk, a little soda should be added or, if possible, the milk should be heated well before it is put in. When it can be done, the milk should be cooked with the sugar before the ingredients likely to make it curdle are added.

In case the milk does curdle, the mixture should be treated at once, or the result will be very unsatisfactory. The best plan consists in beating the mixture rapidly with a rotary egg beater in order to break up the curds as fine as possible, and then stirring it frequently during the boiling to keep the milk from settling and burning. As this stirring is a disadvantage in the making of candy, every precaution should be taken to prevent the curding of the milk.

EQUIPMENT FOR CONFECTION MAKING

42. The utensils for candy making are few in number and simple in nature. As with all of the more elaborate foods, the fancy candies require slightly more unusual equipment, and even for the more ordinary kinds it is possible to buy convenient utensils that will make results a little more certain. But, as illustrated in Fig. 1, which shows the general equipment for confection making, practically all the utensils required are to be found in every kitchen.

[Illustration: FIG. 1]

43. To boil the confectionery ingredients, a saucepan or a kettle is required. This may be made of copper or aluminum or of any of the various types of enamelware that are used for cooking utensils. One important requirement is that the surface of the pan be perfectly smooth. A pan that has become rough from usage or an enamelware pan that is chipped should not be used for the boiling of candy.

The size of the utensil to use depends on the kind and the amount of the mixture to be boiled. A sugar-and-water mixture does not require a pan much larger in size than is necessary to hold the mixture itself, for it does not expand much in boiling. However, a mixture containing milk, condensed milk, cream, or butter should be cooked in a pan much larger than is needed for the same quantity of sugar and water, for such a mixture expands greatly and is liable to boil over. The necessary size of the pan to be used should be overestimated rather than underestimated. In the cooking of candy, just as in the cooking of other foods, the surface exposed to the heat and the depth of the material to be cooked affect the rapidity of cooking and evaporation. Consequently, if rapid evaporation and quick cooking are desired, a pan that is broad and comparatively shallow should be used, rather than one that is narrow and deep.

44. Measuring cups and spoons, a spoon for stirring, and a knife are, of course, essential in making confections. Then, too, it is often convenient to have a metal spatula and a wooden spoon or spatula. When these utensils are made of wood, they are light in weight and

consequently excellent for stirring and beating. If egg whites are used in the preparation of a confection, an egg whip is needed. When candy must be poured into a pan to harden, any variety of pan may be used, but generally one having square corners is the most satisfactory. Then if the candy is cut into squares, none of it will be wasted in the cutting.

45. A thermometer that registers as high as 300 or 400 degrees Fahrenheit is a valuable asset in candy making when recipes giving the temperature to which the boiling must be carried are followed. A degree of accuracy can be obtained in this way by the inexperienced candy maker that cannot be matched with the usual tests. A small thermometer may be used, but the larger the thermometer, the easier will it be to determine the degrees on the mercury column. A new thermometer should always be tested to determine its accuracy. To do this, stand the thermometer in a small vessel of warm water, place the vessel over a flame, and allow the water to boil. If the thermometer does not register 212 degrees at boiling, the number of degrees more or less must be taken into account whenever the thermometer is used. For instance, if the thermometer registers 208 degrees at boiling and a recipe requires candy to be boiled to 238 degrees, it will be necessary to boil the candy to 234 degrees because the thermometer registers 4 degrees lower than it should.

46. The double boiler also finds a place in candy making. For melting chocolate, coating for bonbons, or fondant for reception wafers, a utensil of this kind is necessary. One that will answer the purpose very well may be improvised by putting a smaller pan into a larger one containing water. In using one of this kind, however, an effort should be made to have the pans exactly suited to each other in size; otherwise, the water in the lower pan will be liable to splash into the pan containing the material that is being heated.

For the coating of bonbons, a coating fork, which is merely a thin wire twisted to make a handle with a loop at one end, is the most convenient utensil to use. However, this is not satisfactory for coating with chocolate, a different method being required for this material.

47. A number of candies, such as fondant, bonbon creams, and cream centers for chocolates, can be made much more satisfactorily if, after they are boiled, they are poured on a flat surface to cool. Such treatment permits them to cool as quickly as possible in a comparatively thin layer and thus helps to prevent crystallization. When only a small amount of candy is to be made, a large platter, which is the easiest utensil to procure, produces fairly good results. For larger amounts, as, for instance, when candy is being made to sell, some more convenient arrangement must be made. The most satisfactory thing that has been found for cooling purposes is a marble slab such as is found on an old-fashioned table or dresser. If one of these is not available, and the kitchen or pastry table has a vitrolite or other heavy top resembling porcelain, this will make a very good substitute.

48. To prevent the hot candy from running off after it is poured on a slab or any similar flat surface, a device of some kind should be

provided. A very satisfactory one consists of four metal bars about 3/4 to 1 inch in width and thickness and as long as desired to fit the slab, but usually about 18 inches in length. They may be procured from a factory where steel and iron work is done, or they may be purchased from firms selling candy-making supplies. These bars are merely placed on top of the slab or flat surface with the corners carefully fitted and the candy is then poured in the space between the bars. When it is desired to pour out fudge, caramels, and similar candies to harden before cutting, the metal bars may be fitted together and then placed on the slab in such a way as to be most convenient. Fudge, however, may be cooled satisfactorily in the pan in which it is cooked if the cooling is done very rapidly.

49. A satisfactory cooling slab may be improvised by fastening four pieces of wood together so as to fit the outside edge of the slab and extend an inch or more above the surface. If such a device is used, plaster of Paris should be poured around the edge of the slab to fill any space between the wood and the slab. In using a slab or similar surface for purposes of this kind, a point that should be remembered is that a part of it should never be greased, but should be reserved for the cooling of fondant and certain kinds of center creams, which require only a moistened surface.

50. Many of the candies that are turned out on a flat surface must be worked to make them creamy. For this purpose, nothing is quite so satisfactory as a putty knife or a wallpaper scraper. If a platter is used, a putty knife is preferable, for it has a narrower blade than a wallpaper scraper; but where candy is made in quantity and a large slab is used, the larger scraper does the work better. For use with a platter, a spoon is perhaps the best utensil when a putty knife is not in supply.

51. Scales are valuable in candy making because they permit exact measurements to be made. However, they are not an actual necessity, for almost all recipes give the ingredients by measure, and even if this is not done, they may be purchased in the desired weight or transposed into equivalent measure. Scales, of course, are required if it is desired to weigh out candy in small amounts or in boxes after it is made.

52. Waxed paper is a valuable addition to candy-making supplies, there being many occasions for its use. For instance, caramels and certain other candies must be wrapped and waxed paper is the most suitable kind for this purpose. Then, too, chocolate-coated candies and bonbons must be placed on a smooth surface to which they will not stick. Waxed paper is largely used for this purpose, although candy makers often prefer white oilcloth, because its surface is ideal and it can be cleansed and used repeatedly. Often a candy- or cracker-box lining that has been pressed smooth with a warm iron may be utilized. For such purposes, as when reception wafers are to be dropped, it is necessary that the surface of the paper used be absolutely unwrinkled.

* * * * *

PROCEDURE IN CONFECTION MAKING

COOKING THE MIXTURE

53. WEATHER CONDITIONS.--If uniformly good results are desired in candy making, certain points that determine the success or failure of many candies, although seemingly unimportant, must be observed. Among these, weather conditions form such a large factor that they cannot be disregarded. A cool, clear day, when the atmosphere is fairly dry, is the ideal time for the making of all kinds of candies. Warm weather is not favorable, because the candy does not cool rapidly enough after being cooked. Damp weather is very bad for the making of such candies as the creamy ones that are made with egg white and that are desired to be as soft as possible and still in condition to handle. In view of these facts, candy should be made preferably on days when the weather is favorable if the element of uncertainty, so far as results are concerned, would be eliminated.

54. COMBINING THE SUGAR AND LIQUID.--The proportion of liquid and sugar to use in making candy varies to some extent with the kind of ingredients used and with the quantity of candy being made. In the making of quantities up to several pounds, the usual proportion is _one-third as much liquid as sugar_, but with larger amounts of sugar the quantity of liquid may be slightly decreased.

With the quantities decided on, mix the sugar and liquid and put them over the fire to boil. Stir at first to prevent the sugar from settling and burning, continuing the stirring either constantly or at intervals until the boiling begins. At this point, discontinue the stirring if possible. Mixtures that do not contain milk usually require no further stirring, and many times stirring is unnecessary even in those which do contain milk; but whenever any stirring is required, as little as possible should be done. The rule that applies in this connection is that the sugar should be entirely dissolved before the boiling begins and that all unnecessary agitation should then cease.

55. BOILING THE MIXTURE.--When the mixture begins to boil, wash down the sides of the kettle with a small cloth wet with clean water. This treatment should not be omitted if especially nice candy is desired, for it removes all undissolved sugar and helps to prevent crystallization later. In case merely sugar and water make up the ingredients, a cover may be placed on the kettle; then the steam that is retained will keep any sirup that may splash on the sides from crystallizing. This cannot be done, however, with mixtures containing milk and butter, for they will in all probability boil over.

56. The boiling of candy should be carried on quickly, for slow boiling often proves a disadvantage. A sugar-and-water mixture may, of course, be boiled more rapidly than any other kind, because there is not the danger of its boiling over nor of burning before the water is evaporated that there is with a mixture containing material that may settle and burn. It should be remembered that candy does not begin to burn until the water has entirely evaporated.

57. The length of time candy should boil is also a matter to which attention should be given. This depends somewhat on the kind that is being made, but largely on the rapidity with which the boiling is carried on. Thus, to time the boiling of candy is the most uncertain way of determining when the boiling has continued long enough. The inaccuracy of measurement, the size and shape of the pan, and the rate of speed in boiling cause a variation in the time required. Consequently, it would be rather difficult for the same person to get identical conditions twice and much more difficult for two persons to produce the same results.

58. TESTING CANDY.--Since accurate results cannot be obtained by timing the boiling of candy, other tests must be found that will be reliable. As has already been stated, a thermometer is perhaps the most accurate means that can be adopted for this purpose. However, if one is not available, the testing of a small quantity of the hot mixture by cooling it in cold water will be found to be fairly accurate. Ice water is not necessary nor particularly desirable for this kind of testing. In fact, water just as it comes from the faucet is the best, as it is quickly obtained and its temperature will not vary greatly except in very hot or very cold weather. Of course, to make an extremely accurate test of this kind, it would be necessary always to have the water at the same temperature, a condition that can be determined only by testing the temperature, but such accuracy is not usually required.

If the thermometer is used, all that need be done is to insert it into the candy and allow it to remain there until the temperature is registered. In case it does not reach the right temperature the first time, keep the mixture boiling until it registers the temperature that is decided on as the correct one.

59. To test the mixture by the water method, allow it to boil almost long enough to be done, and then try it at close intervals when it is nearing the end of the boiling. Dip a little of the sirup into a spoon and drop it slowly into a cup containing a little water. Not much sirup is needed for the test, a few drops being sufficient. Gather the drops together with the tips of the fingers and judge from the ball that forms whether the candy has boiled sufficiently or not. If the ball is not of the right consistency, boil the candy a little longer, and test again. Be sure, however, to get fresh water for each test. When the candy is nearing the final test, and it is thought that the mixture has boiled enough, remove the pan from the heat while the test is being made so that the boiling will not be continued too long.

60. To assist in making the tests for candy properly, Table I is given. This table shows both the water test and the corresponding temperature test for the representative variety of the leading classes of candies. In each one of these classes there are, of course, a number of varieties which may cause a slight variation in some of the tests, but on the whole these tests are uniform and can be relied on for practically all candies.

TABLE I

TESTS FOR REPRESENTATIVE CLASSES OF CANDY

Classes	Water Test	Temperature Test Degrees Fahrenheit
Center Cream	Soft ball	234 to 236
Fudge	Firm ball	238 to 240
Caramels	Hard ball	246 to 248
Taffies	Brittle ball	256 to 260

When candy is cooked long enough to form a _soft ball_, it can just be gathered together and held in the fingers. If it is held for any length of time, the warmth of the fingers softens it greatly and causes it to lose its form. This test is used for candies, such as soft-center cream. It will be found that when candy boiled to this degree is finished, it can scarcely be handled.

The _firm ball_ is the stage just following the soft ball. It will keep its shape when held in the fingers for some time. This is the test for fudge, bonbon creams, and similar candies that are creamed and are expected to be hard and dry enough to handle when they are finished.

To form a _hard ball_, candy must be cooked longer than for the firm ball. At this stage, the ball that is formed may be rolled in the finger tips. It is not so hard, however, that an impression cannot be made in it with the fingers. It is the test for caramels, soft butter scotch, sea foam, and many other candies.

A _brittle ball_ is the result of any temperature beyond 256 degrees up to the point where the sugar would begin to burn. It is hard enough to make a sound when struck against the side of the cup or to crack when an attempt is made to break it. This is the test that is made for taffy and other hard candies.

POURING AND COOLING THE MIXTURE

61. After the testing of the mixture proves that it is boiled sufficiently, there are several procedures that may be followed. The one to adopt depends on the kind of candy that is being made, but every candy that is cooked should be cooled by one of the following methods.

62. The first treatment consists in pouring the mixture at once from the pan to be finished without cooling, as, for instance, caramels and butter scotch, which are poured at once into a buttered pan to be cooled and cut; or, the hot sirup may be poured upon beaten egg whites, as in the case of sea foam or penuchie. In the making of either of these kinds, the sirup may be allowed to drip as completely as possible from the pan without injury to the finished product.

63. The second method by which the mixture is cooled calls for cooling the sirup in the pan in which it was cooked, as, for instance, in the

case of fudge. When this is done, the pan should be carried from the stove to the place where the mixture is to be cooled with as little agitation as possible. Also, during the cooling, it should not be disturbed in any way. Stirring it even a little is apt to start crystallization and the candy will then be grainy instead of creamy.

64. In the third form of treatment, the sirup is poured out and then cooled before it is stirred to make it creamy, as in opera creams or bonbon creams. To accomplish this, the pan should be tipped quickly and all its contents turned out at once. It should not be allowed to drip even a few drops, for this dripping starts the crystallization. Candies that contain milk or butter, or sticky materials, such as taffies, should always be poured on a buttered surface. Those which are cooked with water but are to be creamed should be poured on a surface moistened with cold water.

65. When candy mixtures are cooled before being completed, the cooling should be carried to the point where no heat is felt when the candy is touched. To test it, the backs of the fingers should be laid lightly on the surface of the candy, as they will not be so likely to stick as the moist tips on the palm side. It should be remembered that the surface must not be disturbed in the testing, as this is also apt to bring about crystallization.

Every precaution should be taken to prevent even the smallest amount of crystallization. Any crystals that may have formed can be easily detected when the stirring is begun by the scraping that can be felt by the spoon or paddle used. If a little crystallization has taken place before the candy has cooled completely, it being easily seen in the clear sirup, the mixture should be cooled still further, for nothing is gained by stirring it at once.

A point that should always be kept in mind in the cooling of candy is that it should be cooled as quickly as possible. However, a refrigerator should not be used for cooling, for the warm mixture raises the temperature of the refrigerator and wastes the ice and at the same time the moist atmosphere does not bring about the best results. As has already been learned, a platter or a slab is very satisfactory. If either of these is used, it should be as cold as possible when the sirup is poured on it. Cold weather, of course, simplifies this matter greatly, but if no better way is afforded, the utensil used should be cooled with cold water.

FINISHING CANDIES

66. The treatment through which candy mixtures are put after being cooled varies with the kind of candy being made. Some mixtures, as fudge, are beaten until creamy in the pan in which they are cooked. Others are worked on a platter or a slab with the proper kind of utensil. These are usually treated in a rather elaborate way, being often coated with bonbon cream or with chocolate. Still others, such as taffy, are pulled until light in color and then cut into small pieces

with a pair of scissors. Again, certain candies, after being poured into a pan, are allowed to become hard and then cut into squares or broken into pieces. Usually candies made in the home are served without being wrapped, but when certain varieties are to be packed, it is advisable to wrap them. Directions for finishing confections in these different ways are here given.

67. MARKING AND CUTTING CANDIES.--Much of the success of certain candies depends on their treatment after being cooled. Those which must be beaten in the pan until they are creamy should be beaten just as long as possible. Then, if the surface is not smooth when they are poured out, pat it out with the palm of the hand after the candy has hardened a little. As soon as it has hardened sufficiently to remain as it is marked and not run together, mark it in pieces of the desired size, using for this purpose a thin, sharp knife. Be careful to have the lines straight and the pieces even in size. Generally, candy that is treated in this manner is cut into squares, although it may be cut into other shapes if desired.

68. COATING CANDIES WITH BONBON CREAM.--When especially nice candy is desired for a special occasion, it is often made into small pieces and then coated with bonbon cream. A large number of the centers to be coated should be made up before the coating is begun. In fact, if it is possible, all the centers should be made first and then the coating can proceed without interruption. The cream to be used for coating may be flavored or colored in any desirable way. Any flavoring or coloring that is to be used, however, should be added while the cream is melting.

69. To coat with bonbon cream, put the cream in a double boiler without any water and allow it to melt with as little stirring as possible. It is best to use a small double boiler for this purpose and not to melt too much of the cream at one time, as it is apt to become grainy if it is used too long for dipping. When it has melted to the extent that the coating will not be too thick after it has cooled, the dipping of the candies may begin. As soon as it is found that no more centers can be dipped in the cream, melt some fresh cream for the remaining centers, but do not add it to that which has been used before. Instead, use the first up as closely as possible and then drop the remainder by spoonfuls on waxed paper. With all of it used, wash and dry the inner pan of the double boiler and start again with a fresh lot of the cream.

70. To coat the centers, drop one at a time into the melted cream and turn over with a coating fork or an ordinary table fork. When the surface is entirely covered, lift out of the cream with the fork and allow any superfluous coating to drip off. Then drop the coated bonbons on waxed paper, to cool. While this work may prove a little difficult at first, it can be done with dexterity after a little practice. If an effort is made to have the centers uniform in size and shape, the finished candies will have the same appearance. While the cream is soft, tiny pieces of candied fruit or nuts may be pressed into the coating to decorate the bonbons.

71. COATING WITH CHOCOLATE.--Candies coated with chocolate are always

desirable; so it is well for any one who aspires toward confection making to become proficient in this phase of the work. The centers should, of course, be prepared first and put in a convenient place on the table where the coating is to be done. They may be made in any desired size and shape.

If it is possible to secure a regular coating chocolate, this should be obtained, for it produces better results than does a chocolate that can be prepared. However, unless one lives in a place where confectioner's supplies are on sale, it is almost impossible to purchase a chocolate of this kind. In such an event, a substitute that will prove very satisfactory for candy to be eaten in the home and not to be sold may be made as follows:

COATING CHOCOLATE

4 oz. milk chocolate
2 oz. bitter chocolate
1/2 oz. paraffin

To prepare the chocolate, put all the ingredients in a double boiler and allow them to melt, being careful that not a single drop of water nor other foreign substance falls into the mixture. Do not cover the boiler, for then the steam will condense on the inside of the cover and fall into the chocolate. As this will spoil the chocolate so that it cannot be used for coating, the pan in which the chocolate is melted should always be allowed to remain open. The paraffin used helps to harden the chocolate after it is put on the centers; this is a particular advantage at any time, but especially when chocolates are made in warm weather.

72. When the chocolate HAS COMPLETELY MELTED, dip some of it into a small bowl or other dish or utensil having a round bottom and keep the rest over the heat so that it will not harden. With a spoon, beat that which is put into the bowl until it is cool enough to permit the fingers being put into it. Then work it with the fingers until all the heat is out of it and it begins to thicken. It may be tested at this point by putting one of the centers into it. If it is found to be too thin, it will run off the candy and make large, flat edges on the bottom. In such an event, work it and cool it a little more. When it is of the proper thickness, put the centers in, one at a time, and, as shown in Fig. 2, cover them completely with the chocolate and place them on waxed paper or white oilcloth to harden. As they harden, it will be found that they will gradually grow dull. No attempt whatever should be made to pick up these candies until they are entirely cold. This process is sometimes considered objectionable because of the use of the bare hands, but chocolate coating cannot be so successfully done in any other way as with the fingers. Therefore, any aversion to this method should be overcome if good results are desired.

[Illustration: FIG. 2]

73. When the chocolate begins to harden in the bowl and consequently is

difficult to work with, add more of the hot chocolate from the double boiler to it. It will be necessary, however, to beat the chocolate and work it with the fingers each time some is added, for otherwise the coating will not be desirable. So as to overcome the necessity of doing this often, a fairly large amount may be cooled and worked at one time. Care should be taken to cover each center completely or its quality will deteriorate upon standing. With conditions right, the centers of chocolates and bonbons should soften and improve for a short time after being made, but chocolate-coated candies will keep longer than bonbons, as the coating does not deteriorate.

[Illustration: FIG. 3]

[Illustration: FIG. 4]

74. WRAPPING CANDIES.--Such candies as caramels, certain kinds of taffies, and even chocolates are often wrapped in waxed paper, especially if they are to be packed in boxes. When this is to be done, cut the paper into pieces of the proper size and then wrap each piece separately. The best way to prepare the paper is to fold several sheets until they are the desired size and then, as in Fig. 3, cut them with a sharp knife. If a pair of scissors is used for this purpose, they are apt to slip and cut the paper crooked. The method of wrapping depends on the candy itself. Caramels are wrapped in square pieces whose ends are folded in neatly, as in Fig. 4, while taffy in the form of kisses is rolled in the paper and the ends are twisted to fasten the wrapping.

* * * * *

VARIETIES OF CONFECTIONS AND THEIR PREPARATION

TAFFIES AND SIMILAR CANDIES

NATURE OF TAFFIES

75. TAFFY is probably one of the simplest candies that can be made. Indeed, if candy of this kind is boiled long enough, it is almost impossible to have unsatisfactory results. Taffies are usually made from white sugar, but a variety of flavors may be obtained by the use of different ingredients and flavors. For instance, molasses is used for some taffies, maple sirup for others, and brown sugar for others, and all of these offer an opportunity for variety. Then, again, taffy made from white sugar may be varied by means of many delightful colors and flavors. Melted chocolate or cocoa also makes a delightful chocolate-flavored taffy. Recipes for all of these varieties are here given, together with a number of recipes for closely related confections, such as butter scotch, glacØ nuts and fruits, peanut brittle, and nut bars.

76. METHODS OF TREATING TAFFY.--Taffy may be poured out in a pan, allowed to become entirely cold, and then broken into irregular pieces for serving, or it may be pulled and then cut in small pieces with a pair of scissors. If it is to be pulled, it should be poured from the

pan in which it is cooked into flat pans or plates and set aside to cool. As soon as it is cool enough to handle, it may be taken from the pans and pulled. It will be found that the edges will cool and harden first. These should be pulled toward the center and folded so that they will warm against the center and form a new edge. If this is done two or three times during the cooling, the candy will cool evenly and be ready to take up into the hands. The pulling may then begin at once. If it has been cooked enough, it will not stick to the hands during the pulling. It is usually wise, however, to take the precaution of dusting the hands with corn starch before starting to pull the candy. Grease should never be used for this purpose. When taffy is made in quantities, the work of pulling it is greatly lessened by stretching it over a large hook fastened securely to a wall.

RECIPES FOR TAFFY

77. VANILLA TAFFY.--The taffy explained in the accompanying recipe is flavored with vanilla and when pulled is white in color. However, it may be made in different colors and flavors by merely substituting the desired flavor for the vanilla and using the coloring preferred. This recipe may also be used for chocolate taffy by adding melted chocolate just before the taffy has finished boiling.

VANILLA TAFFY

4 c. sugar
1/4 tsp. cream of tartar
1 Tb. vinegar
1 c. boiling water
2 Tb. butter
1 tsp. vanilla

To the sugar, add the cream of tartar, vinegar, and boiling water. Place over the fire and boil until it will form a brittle ball when tested in cold water or will register at least 260 degrees on a thermometer. Just before the boiling is completed, add the butter. Remove from the fire, add the vanilla, pour in a shallow layer in a buttered pan or plate. Cool and pull. When the taffy has been pulled until it is perfectly white and is hard enough to retain its shape, twist it into a long, thin rope and cut with a pair of scissors into inch lengths.

78. BUTTER TAFFY.--Another variety of taffy flavored with vanilla is the one given in the accompanying recipe. It is called butter taffy because butter is used in a rather large amount for flavoring. It will be noted, also, that brown sugar and corn sirup are two of the ingredients. These, with the butter, give the taffy a very delightful flavor.

BUTTER TAFFY

2 c. light-brown sugar
1 c. white sugar
1/2 c. corn sirup

1 Tb. vinegar
3/4 c. boiling water
1/4 butter
1 tsp. vanilla

Mix all the ingredients except the butter and vanilla. Place over the fire and boil until a brittle ball will form in cold water or a temperature of 260 degrees is reached. Just before the boiling has been completed, add the butter. Remove from the fire, add the vanilla, and pour in a thin layer into greased pans or plates. Cool, pull, and cut.

79. MOLASSES TAFFY.--Of all the taffies, that made with molasses is nearly always the favorite. A light cane molasses that is not very strong in flavor is the preferred kind for this candy. When cut into round flat pieces and wrapped in waxed paper, molasses taffy appeals to both old and young.

MOLASSES TAFFY

2 c. light cane molasses
1 c. sugar
2 Tb. vinegar
1/2 c. boiling water
2 Tb. butter

Mix all the ingredients except the butter. Cook until a brittle ball will form or a temperature of 264 degrees is reached on the thermometer. Add the butter just before the boiling is completed. Remove from the fire, pour into greased pans or plates, and allow it to become cool enough to handle. Then pull and cut.

80. CHEWING TAFFY.--A taffy that is hard enough not to be sticky and still soft enough to chew easily is often desired. Chewing taffy, which is explained in the accompanying recipe, is a candy of this kind. After being pulled, it may be cut as other taffy is cut or it may be piled in a mass and chopped into pieces.

CHEWING TAFFY

1/2 Tb. unflavored gelatine
2 c. sugar
1-1/2 c. corn sirup
1-1/4 c. milk
2 Tb. butter
Vanilla and lemon

Put the gelatine to soak in a few tablespoonfuls of cold water. Cook the sugar, sirup, and milk until the mixture will form a hard ball that may be dented with the fingers or it reaches a temperature of 252 degrees. Stir the mixture gently to prevent burning. Remove from the fire and add the butter. Take the gelatine from the water, squeeze it as dry as possible, and add it to the hot mixture, stirring until it is entirely dissolved. Pour on a greased surface, cool, and pull until it is a

light-cream color. While pulling, flavor with vanilla and a few drops of lemon. Stretch into a long thin rope and cut into inch lengths or pile in a mass and chop into pieces.

81. BUTTER SCOTCH.--Closely related to taffies so far as ingredients are concerned is candy known as butter scotch. This variety, however, is not pulled as are the taffies, but is allowed to become cool and then marked in squares which are broken apart when the candy is entirely cold.

BUTTER SCOTCH

2 c. white sugar
2 c. brown sugar
1/4 c. corn sirup
1 Tb. vinegar
1/4 tsp. cream of tartar
1/4 c. butter
1 tsp. lemon extract

Mix all the ingredients except the butter and the lemon extract. Boil until a hard ball will form or 256 degrees register on the thermometer. Just before the boiling is completed, add the butter, and when the mixture has been removed from the fire, add the lemon extract. Pour into a greased pan, and before it has entirely cooled, cut into squares with a knife. When cold and desired for serving, remove from the pan and break the squares apart. If desired, candy of this kind may be allowed to become entirely cold without cutting and then broken into irregular pieces just before being served.

82. MARSHMALLOWS COATED WITH BUTTER SCOTCH.--A delightful confection may be made by covering marshmallows with hot butter scotch. To accomplish this, drop the marshmallows with a coating fork or an ordinary table fork into hot butter scotch that has just finished cooking. Remove them quickly, but see that the marshmallows are entirely covered. Drop on a buttered pan or plate and set aside to cool.

83. GLACÉNUTS AND FRUITS.--Nuts and fruits covered with a clear, hard candy are known as glacØ nuts and fruits. These are a very delightful confection, and can easily be made if the accompanying directions are carefully followed. Nuts of any variety may be used for this purpose, and such nuts as almonds need not be blanched. Candied cherries, candied pineapple, pressed figs, dates, and raisins are the fruits that are usually glacØd. Confections of this kind should be eaten while fresh or kept in a closed receptacle in a dry place.

GLACÉNUTS AND FRUITS

Fruits and nuts
2 c. granulated sugar
1/8 tsp. cream of tartar
3/4 c. water
1 tsp. vanilla

Prepare the nuts by shelling them and, if necessary, roasting them, and the fruits by cutting them into small strips or cubes. Mix the sugar and cream of tartar and add the water. Cook until it will form a very brittle ball in water, will spin hair-like threads when drops of it fall from the spoon, or registers 290 degrees on the thermometer. Remove from the fire and put in a convenient place for the dipping of the fruit and nuts. Drop these into the hot sirup, one at a time, with a coating fork or an ordinary table fork. When entirely covered with the sirup, remove and drop on greased plates or pans.

84. PEANUT BRITTLE.--Peanuts are often used in confection making and are very much liked by the majority of persons. They come in two general varieties, which may be roasted before use or used unroasted, and it is well for the housewife to understand the difference between them. One variety is the large, oblong peanut generally sold at peanut stands and used for the salted peanuts sold in confectionery stores. The other is the variety known as Spanish peanuts, which are small and round. For some candies, it is necessary that the peanuts be roasted and the skins removed, while for others unroasted peanuts with the skins on are desirable. To remove the skins from unroasted peanuts, they must be blanched by immersing them in boiling water until the skins will slip off easily, but in the case of roasted peanuts, the skins may be removed without blanching.

85. Peanut brittle is one of the candies in which peanuts are used. As its name implies, it is very thin and brittle and it usually contains a great many peanuts. Two recipes for candy of this kind are here given, one requiring peanuts that are roasted and blanched and the other, peanuts that are unroasted and not blanched.

PEANUT BRITTLE NO. 1

2 c. sugar
1/2 lb. shelled, roasted peanuts

Put the sugar in a saucepan without any water. Place it over a slow fire and allow it to melt gradually until a clear, reddish-brown liquid is formed, taking care not to allow it to burn. Have a pan greased and covered with a thick layer of a large variety of roasted peanuts. Pour the melted sugar over them and allow it to become hard. Then break into pieces and serve.

PEANUT BRITTLE NO. 2

3 c. sugar
1 c. corn sirup
1 c. water
1/4 c. butter
1 lb. raw Spanish peanuts
1 tsp. vanilla
1 Tb. soda

Mix the sugar, sirup, and water and place it over the fire. Boil until a hard ball will form or a temperature of 250 degrees is reached on the thermometer. Add the butter and the peanuts without removing their brown skins. Allow to cook, stirring all the time, until the mixture begins to turn a light brown and the skins of the peanuts pop open, showing that the peanuts are roasted. Remove from the fire, add the vanilla and the soda and stir rapidly. Then pour the mixture, which will become thick upon the addition of the soda, on a flat, greased surface. A slab is better for this purpose than anything else, but if this cannot be obtained a metal or other hard table top may be used. When the candy begins to get stiff, loosen it from the surface on which it was poured, cut it into two pieces, and turn each over; or, if it can be handled without cutting, turn the entire piece over. Then stretch the candy until it is just as thin as possible, beginning around the edge. As it becomes colder, stretch even thinner. When entirely cool, break into pieces and serve.

86. NUT BARS.--Another excellent nut candy can be made by pouring a sirup made of sugar, corn sirup, and water over a thick layer of nuts. Such fruits as dates and figs or coconut, or a combination of these, may be used with the nuts, if desired.

NUT BARS

2 c. sugar
3/4 c. corn sirup
1/4 c. water
1-1/2 c. shelled nuts

Put the sugar, sirup, and water over the fire and stir until it boils. Cover and cook until a hard ball will form or a temperature of 254 or 256 degrees is reached. Spread the nuts on a buttered slab or pan, and to them add fruit or coconut if it is desired to use either of these. Pour the hot sirup over this until it is about 1 inch in thickness. When sufficiently cool, cut in pieces of any desirable size, using a quick, sliding motion of the knife and pressing down at the same time. Break into pieces when entirely cold and serve.

CARAMELS

87. NATURE OF CARAMELS.--Caramels are included among the popular candies, and they may be made in many varieties. To plain vanilla caramels, which are the simplest kind to make, may be added any desirable color or flavor at the time they are removed from the fire. To keep caramels from crystallizing after they are boiled, glucose in some form must be used, and the most convenient kind to secure is corn sirup. Then, too, caramels will cut more easily and will have less of a sticky consistency if a small piece of paraffin is boiled with the mixture. The addition of this material or any wax that is not a food is contrary to the pure-food laws, and such candy cannot be sold. However, paraffin is not harmful, but is merely a substance that is not digested, so that the small amount taken by eating candy in which it is used cannot possibly

cause any injury.

88. In the making of caramels, it should be remembered that good results depend on boiling the mixture to just the right point. If they are not boiled enough, they will be too soft to retain their shape when cut, and if they are cooked too long, they will be brittle. Neither of these conditions is the proper consistency for caramels. To be right, they must be boiled until a temperature of 246 to 248 degrees is reached. However, chocolate caramels need not be boiled so long, as the chocolate helps to harden them.

89. PLAIN CARAMELS.--The accompanying recipe for plain caramels may be made just as it is given, or to it may be added any flavoring or coloring desired. A pink color and strawberry flavor are very often found in caramels and are considered to be a delicious combination. As will be noted, white sugar is called for, but if more of a caramel flavor is preferred, brown sugar may be used instead of white. Maple sugar may also be used in candy of this kind. Nuts, fruits, or coconut, or any mixture of these materials, improves plain caramels wonderfully. If they are used, they should be stirred into the mixture at the time it is removed from the fire.

PLAIN CARAMELS

3 c. milk
3 c. sugar
1-1/2 c. corn sirup

The milk used for making caramels should be as rich as possible; in fact, if cream can be used, the candy will be very much better. Add half of the milk to the sugar and sirup and put over the fire to cook. Allow this mixture to boil until a soft ball will form when dropped in water, stirring when necessary to prevent burning. Then gradually add the remaining milk without stopping the boiling if possible. Cook again until a temperature of 248 degrees will register on the thermometer or a fairly hard ball will form when tried in water. In the water test, the ball, when thoroughly cold, should have exactly the same consistency as the finished caramels. Toward the end of the boiling, it is necessary to stir the mixture almost constantly to prevent it from burning. When done, pour it out on a buttered slab or some other flat surface and allow it to become cool. Then cut the candy into squares from 3/4 to 1 inch in size, cutting with a sliding pressure, that is, bearing down and away from you at the same time.

If the caramels are to be packed or kept for any length of time, it is well to wrap them in waxed paper. Before attempting to use caramels, however, they should be allowed to stand overnight in a cool, dry place, but not in a refrigerator.

90. CHOCOLATE CARAMELS.--When chocolate caramels are made, the chocolate should be added just before the cooking is finished. The amount of chocolate to be used may be varied to suit the taste, but 2 squares are usually considered sufficient for the quantities given in the

accompanying recipe.

CHOCOLATE CARAMELS

1 c. molasses or 1 c. maple sirup
1/2 c. corn sirup
2 c. sugar
1 pt. milk
2 Tb. butter
2 sq. chocolate
Pinch of salt
1 tsp. vanilla

Cook the molasses or maple sirup, the corn sirup, and the sugar with 1 cupful of the milk until the mixture will form a soft ball in cold water. Then add the remainder of the milk and cook until the mixture is thick. Add the butter, chocolate, and salt, and cook until a hard ball will form in cold water or a temperature of 248 degrees is reached, stirring constantly to prevent burning. Add the vanilla, pour on a buttered surface, cool, cut, and serve.

* * * * *

CREAM CANDIES

NATURES OF CREAM CANDIES

91. There are numerous varieties of cream candies, some of which must be made with great care while others may be made quickly and easily. For instance, fudge, penuchie, divinity, and sea foam are examples of cream candies that do not require long preparation, but these must generally be used up quickly, as they do not stay soft upon exposure to the air unless it is very moist. On the other hand, such cream candies as opera cream, fondant, center cream, and orientals require both care and time in their preparation. If these are properly looked after, they may be kept for some time. In fact, it is necessary that some of them stand for several days before they can be made into the numerous varieties to which they lend themselves.

The main point to consider in the preparation of all cream candies is that crystallization of the sugar, which is commonly called _graining_, must be prevented if a creamy mixture is to be the result. Candies of this kind are not palatable unless they are soft and creamy. However, no difficulty will be experienced in preparing delicious cream candies if the principles of candy making previously given are applied.

FUDGES AND RELATED CANDIES

92. FUDGE NO. 1.--Probably no other candy is so well known and so often made as fudge. Even persons little experienced in candy making have success with candy of this kind. Another advantage of fudge is that it can be made up quickly, very little time being required in its

preparation. Several varieties of fudge may be made, the one given in the accompanying recipe being a chocolate fudge containing a small quantity of corn starch.

FUDGE No. 1

3 c. sugar
1-1/4 c. milk
2 Tb. butter
Pinch of salt
2 sq. chocolate
1 Tb. corn starch
3 Tb. water
1 tsp. vanilla

Mix the sugar, milk, butter, and salt and boil until a very soft ball will form in water. Then add the chocolate and the corn starch, which has been moistened with the cold water. Boil to a temperature of 236 degrees or until a ball that will hold together well and may be handled is formed in cold water. Remove from the fire and allow the mixture to cool until there is practically no heat in it. Add the vanilla, beat until thick, pour into a buttered pan, cut into squares, and serve.

93. FUDGE NO. 2.--A fudge containing corn sirup is liked by many persons. It has a slightly different flavor from the other variety of fudge, but is just as creamy if the directions are carefully followed.

FUDGE No. 2

3/4 c. milk
2 c. sugar
1/4 c. corn sirup
2 Tb. butter
Pinch of salt
2 sq. chocolate
1 tsp. vanilla

Cook the milk, sugar, corn sirup, butter, and salt until the mixture will form a very soft ball when tried in water. Add the chocolate and cook again until a soft ball that can be handled will form or the thermometer registers 236 degrees. Remove from the fire, cool without stirring until entirely cold, and then add the vanilla. Beat until creamy, pour into buttered pans, cut into squares, and serve.

94. TWO LAYER FUDGE.--A very attractive as well as delicious fudge can be had by making it in two layers, one white and one dark. The dark layer contains chocolate while the white one is the same mixture, with the exception of the chocolate. The layers may be arranged with either the white or the dark layer on top, as preferred.

TWO-LAYER FUDGE

4 c. sugar

1-1/2 c. milk
6 Tb. corn sirup
2 Tb. butter
Pinch of salt
2 sq. chocolate
1 tsp. vanilla

Mix the sugar, milk, corn sirup, butter, and salt, and cook until a very soft ball will form. Transfer half of the mixture to another pan and add to it the chocolate, which has been melted. Boil each mixture until it tests 238 degrees with the thermometer or a soft ball that can be handled well will form in cold water. Upon removing it from the fire, add the vanilla, putting half into each mixture. Set aside to cool and when all the heat is gone, beat one of the mixtures until it becomes creamy and pour it into a buttered pan. Then beat the other one and pour it over the first. Cut into squares and serve.

95. BROWN-SUGAR FUDGE.--Fudge in which brown sugar is used for the largest part of the sweetening is explained in the accompanying recipe. Peanuts are added, but if desired nuts of any other kind may be used.

BROWN-SUGAR FUDGE

2 c. brown sugar
1 c. white sugar
1 c. milk
1 Tb. butter
1 tsp. vanilla
3/4 c. chopped peanuts

Mix the sugar, milk, and butter and boil until a soft ball will form in cold water or a temperature of 238 degrees is reached on the thermometer. Remove from the fire, add the vanilla, and cool until the heat is out of the mixture. Beat, and when the candy begins to grow creamy, add the chopped nuts. When sufficiently thick, pour into a buttered pan, cut, and serve.

96. MAPLE PENUCHIE.--Almost any kind of maple candy finds favor with the majority of persons, but maple penuchie is especially well liked. Nuts and coconut are used in it, and these improve the flavor very much.

MAPLE PENUCHIE

3 c. maple sirup
1/4 tsp. soda
1 c. milk
Few grains of salt
1 tsp. vanilla
1/2 c. chopped nuts
1/2 c. shredded coconut

Into the maple sirup, stir the soda, and add the milk and salt. Place over the fire and boil until a soft ball that can be easily handled will

form in cold water or a temperature of 238 degrees is reached on the thermometer. Remove from the fire, add the vanilla, and allow the mixture to become entirely cold. Beat, and when it begins to get thick, add the nuts and coconut. Continue beating until the candy grows stiff but can be poured out. Pour in a buttered pan, cut, and serve.

97. DIVINITY.--An excellent confection known as divinity can be made with very little difficulty if the accompanying recipe is carefully followed. Nuts and raisins are used in this confection, but if desired they may be omitted. As divinity is dropped from a spoon on oiled paper, care should be taken not to boil the mixture too long, or it will be necessary to work very rapidly in order to drop all of it before it becomes too dry.

DIVINITY

1/3 c. corn sirup
1/2 c. water
2 c. sugar
1 egg white
1 tsp. vanilla
1/4 c. nuts
1/4 c. raisins

Boil the sirup, water, and sugar together until a fairly hard ball will form in cold water or the mixture registers 240 degrees on the thermometer, which is a trifle harder than the fudge mixture. Beat the egg white until it is stiff but not dry. Over this pour the hot mixture a drop at a time until it can be added faster without cooking the egg white. Beat rapidly until all the sirup is added, stir in the vanilla, and when fairly stiff add the nuts and raisins. Continue beating until the mixture will stand alone, and then drop by spoonfuls on oiled paper or a buttered surface. When dry enough to handle, divinity may be served.

98. SEA FOAM.--Another candy in which a cooked sirup is poured over beaten egg white is known as sea foam. Candies of this kind should be served at once, for they are apt to become dry and hard if they are allowed to stand.

SEA FOAM

2 c. light-brown sugar
1/2 c. water
Pinch of salt
1 egg white
1 tsp. vanilla

Boil the sugar, water, and salt until a fairly hard ball will form or the thermometer registers 240 degrees. Beat the egg white stiff, but not dry. Pour the hot sirup over the egg white, a drop at a time at first, and then as fast as possible without cooking the egg white. Add the vanilla and continue beating the mixture until it will stand alone. Drop

by spoonfuls on a buttered surface or oiled paper. When sufficiently dry, remove from the surface and serve.

FONDANT AND RELATED CREAMS

99. NATURE OF FONDANT.--Fondant is the foundation cream out of which bonbons and various other fancy candies are made. It is also used for stuffing dates, taking the place of the pit. While it is not so desirable for the centers of chocolate creams as for most of the other candies for which it is used, it can, of course, be coated with chocolate if desired. Some persons have an idea that fondant and related candies are difficult to make, but if directions are followed carefully this will not be the case.

[Illustration: FIG. 5]

100. In the first place, it should be remembered that the weather is an important factor in the success of candy of this kind. A clear, cold day should be selected, for it is difficult to make fondant successfully on a warm or a damp day. Then, too, it is an excellent plan to make more than can be used at one time, for no greater labor will be involved in the making of a large amount than a small amount and better results may be expected. If the fondant material is cared for properly, small quantities of it may be made up as desired. Therefore, if convenient equipment is on hand for making candies of this type, no less than 2-1/2 pounds should be made at one time. Five pounds is a preferable amount, but, if desired, 10 pounds may be made up at one time, although this amount is about as much as one person can handle and even this is somewhat difficult for some to work up.

[Illustration: FIG. 6]

A little ingenuity on the part of the person making up the fondant will result in many delightful bonbons. Candied fruits, nuts, coconut, and numerous varieties of flavoring and coloring may be utilized very successfully with fondant. It should be remembered, however, that bonbons do not keep fresh for more than a few days or a week at the most if they are exposed to the air. If it is desired to keep them for any length of time, they should be packed in a tin box, but when stored in this way, different colors should not be placed next to each other or they will mix.

101. FONDANT.--As will be noted, the accompanying recipe for fondant calls for 5 pounds of sugar. It is not necessary that all of the fondant be worked up at once. Indeed, it is suggested that this amount be prepared and then stored so that the fondant may be used as needed. If a smaller amount should be desired, half of each ingredient may be used.

FONDANT

5 lb. sugar
1 qt. water

6 drops acetic acid or 1/4 tsp. cream tartar

Mix the sugar, water, and acetic acid or cream of tartar. Place over the fire and, as in Fig. 5, stir until the sugar is dissolved. Just before the mixture begins to boil, wash down the sides of the kettle with a wet cloth, as shown in Fig. 6. Then place a lid over the kettle and cook until almost ready to test. Remove the cover and, as in Fig. 7, insert a thermometer, which should register 238 degrees. If the fondant is to be stored for some time, it may be boiled to 240 degrees, but for general use a mixture that reaches a temperature of 238 degrees will be the most satisfactory. If the water test is applied, as in Fig. 8, the mixture should form a firm ball that can be easily held in the fingers. Just before the boiling is completed, cool a large platter or a slab and moisten it by wetting it with a damp cloth.

[Illustration: FIG. 7]

No time should intervene between the end of the boiling and the removal of the sirup from the stove, for every second that the sirup is allowed to stand over the hot burner before it is poured out will raise the temperature. Pour quickly on the platter, as in Fig. 9, and do not allow it to drip. If some sirup is left in the pan, utilize it for something else, rather than allow it to drop on the surface of the candy in the platter or slab. It is at this point that crystallization begins, and the fondant, instead of being creamy, will become grainy. Cool as quickly as possible, so as to lessen the chances for crystallization to begin, and do not disturb the sirup in any way during the cooling. The best way in which to accomplish this is to put the platter in a cool place and make it perfectly level before the sirup is poured into it.

[Illustration: FIG. 8]

[Illustration: FIG. 9]

When the mixture has cooled to the extent that it no longer retains any heat, it is ready to be stirred. As already explained, a putty knife or a wallpaper scraper is the most satisfactory utensil to use for this purpose, especially if a large batch is being made. However, a small batch may be stirred very successfully with a case knife. With whatever utensil is selected, scrape the fondant up into a heap, and then, as in Fig. 10, start the working. See that all parts are worked alike. Continue the operation, occasionally scraping off the knife or the paddle used. The first indication of the creaming stage will be a cloudy look in the mixture and a slight thinning of it, so that the work will be easier for a few minutes. It will then gradually begin to harden, and when the end of the work is reached the hardening will progress rapidly. At this stage, try to get the mass together, see that no loose fragments cling to the platter, and pile all into a heap. By the time the working is completed, the candy will be rather hard and will look as if it can never be worked into a soft, creamy candy. It will become soft, however, by the proper treatment.

[Illustration: FIG. 10]

[Illustration: FIG. 11]

Wring a clean towel or napkin out of cold water, and, as in Fig. 11, place it tightly over the mass of fondant and tuck it in securely around the edges. Allow the candy to stand for an hour in this way. At the end of this time it will be sufficiently moist to work in any desired way. With a knife or a scraper, break it off into pieces of a size that can be handled well at one time and work each one of these soft by squeezing it in the manner shown in Fig. 12. When all of the pieces have been worked soft, pack them into a bowl and continue working until all the fondant has been worked together and is soft. Over the top of the bowl, as shown in Fig. 13, place a damp cloth and cover this with a plate or an earthen cover. Set away in some place where it will remain cool, but will not become too moist, until it is desired for further use.

[Illustration: FIG. 12]

The four recipes that follow show how fondant can be made up into attractive as well as delicious confections. They will doubtless give the housewife other ideas as to ways of preparing candies from this foundation material.

102. BONBONS.--In a broad sense, bonbons mean candy or confections in general, but it is also the name of candies made out of colored and flavored fondant. Sometimes they are made small and dainty and are decorated with a nut meat or a piece of maraschino or candied cherry or candied pineapple. Again, centers may be made that contain coconut, nuts, figs, dates, raisins, etc., and these then dipped in some of the fondant that has been colored, flavored, and melted.

[Illustration: FIG. 13]

103. When bonbons are to be made, remove fondant in pieces from the utensil in which it has been stored. Work it with the hands as it was worked when put away and add the desired coloring and flavoring at this time. If simple bonbons are to be made, form the colored and flavored fondant into tiny balls, place them on oiled paper, and press a nut or a piece of maraschino or candied cherry or candied pineapple on top.

104. To make more elaborate bonbons, form, as in Fig. 14, small round centers out of the fondant to which have been added such materials as dates, figs, raisins, nuts, or coconut, or any combination of these. Only enough fondant should be used to make the other materials stick together. Then, in a double boiler, color, flavor, and melt some of the fondant and, with a coating or other fork, drop the centers into this melted cream. When thoroughly coated, remove, and place on waxed paper. While warm, a piece of nut or candied fruit may be placed on the top of each one. If it is desired not to use fondant in the centers, the nuts or candied fruits themselves may be dipped into the melted bonbon cream and then placed on waxed paper to harden.

[Illustration: FIG. 14] [Illustration: FIG. 15]

105. RECEPTION WAFERS.--Thin wafers made of fondant are a confection much used at parties, receptions, and similar social gatherings. One variety of these is colored pink and flavored with wintergreen, while another is flavored with peppermint and not colored in any way. Other colors and flavors may also be made if desired, but the usual kinds are the pink and white ones.

Divide the mass of fondant to be used into two parts and color one of these a pale pink. Flavor the pink mass with wintergreen and the white one with peppermint. Put one of these in a double boiler and allow it to melt until it is soft enough to pour. Then, as in Fig. 15, with a dessert spoon or a tablespoon, drop the melted fondant on a smooth surface in sufficient amounts to make wafers about the size of a quarter. Drop quickly and as accurately as possible so that the wafers will be the same size and shape. Allow them to stand until cold and set.

Sometimes it will be found that two wafers can be dropped from the same spoonful before the material becomes too cold to pour, but usually it is necessary to dip a fresh spoonful for each wafer. As the fondant hardens on the back of the spoon it should be scraped off and put back into the double boiler. A comparatively small amount of fondant should be melted at one time in order to provide against its becoming sugary, but if it shows any signs of this condition the double boiler should be emptied and thoroughly cleaned before more of the fondant is melted in it.

106. RAINBOW DELIGHT.--An especially attractive candy that has fondant for its foundation is rainbow delight. As may be inferred from its name, candy of this kind is in several colors.

To make rainbow delight, divide fondant into three parts. Flavor one with vanilla and to it add chopped nuts. Flavor the second with strawberry, color it pink, and, if desired, add shredded coconut. To the third, add melted bitter chocolate until it is as dark as preferred. Line a small bread pan or a box as smoothly as possible with waxed paper, place the white fondant in the bottom, and press it down into a layer. Over this put the chocolate fondant, press this into a layer, and on top of it place the pink candy. After making the mass smooth and even, allow it to remain where it will be cold until it is set. Then remove it from the pan or box by turning it out on a surface that has been slightly dusted with confectioner’s sugar. Have coating chocolate melted and cover the surface of three sides of the candy with a thick layer of the chocolate. If, when the chocolate becomes dry and hard, it seems a little thin, give it a second coating.

When it is entirely cold, turn the candy over and coat the remaining side. To serve, cut into slices and cut each slice into pieces.

107. TUTTI-FRUTTI ROLLS.--Another very good candy that can be made from fondant is tutti-frutti roll. Secure nuts, cherries, candied pineapple, and citron, chop them fine, and to them add shredded coconut. Work these in any quantity desired into the fondant until all are worked through evenly and then flavor with vanilla. Shape the mass into a roll and let

it stand until it is well set. Then coat it with coating chocolate. When it has become cold, turn it over and coat the bottom. To serve tutti-frutti roll, cut it into slices.

108. OPERA CREAM.--No more delicious cream candy can be made than that known as opera cream. This may be colored and flavored in many different ways or made up in various forms. When chocolate is added to it, a better fudge than the ordinary kinds is the result. Sufficient time should be allowed for the making of opera cream, for it is necessary that this candy stand for several hours before it is worked up.

OPERA CREAM

4 c. sugar
1/8 tsp. cream of tartar
2 Tb. corn sirup
1 pt. thin cream
Vanilla

Mix the sugar and the cream of tartar, add the sirup and cream, and cook over a hot fire. Watch closely to see whether the cream looks as if it might curd, and if it does, beat rapidly with a rotary beater. Do not stir after the boiling has begun unless it is necessary to keep the mixture from sticking to the pan. Boil until a very hard ball will form in water or until it registers 240 degrees on the thermometer. Moisten a large, flat platter or a marble slab, pour the mixture on it, and allow it to remain until it is entirely cool, disturbing it in no way during this cooling. When cool, work up with a putty knife or a similar utensil in the same manner as for fondant until it becomes hard and creamy. Place all in a heap in the center of the slab or platter and cover closely with a damp cloth, a clean towel being desirable for this purpose. Allow it to stand for about 2 hours, and then work it with the hands, being careful to remove any lumps that it might contain.

The cream is now ready to be worked up in any desirable way. Divide it into small batches, and then flavor and color it or work melted chocolate into it. Press it into a layer about 1 inch thick in a shallow box lined with waxed paper or a pan that has been buttered, cut it into squares, and allow it to stand for a few hours. Then remove and serve.

109. CENTER CREAM.--An excellent cream candy for the centers of chocolates is given in the accompanying recipe. As molds are necessary in its preparation, it is more difficult to make than fondant, but success can be had with this as well as with other candies.

The cream used for these centers may be colored and flavored in any desirable way. It is somewhat firm while being handled, but will be found to soften after it has been made up and coated. It can be handled better if it is made 3 or 4 days before it is desired for use. As will be noted, the recipe is given in a fairly large quantity, for it is preferable to make a good-sized amount of the cream at a time; but it need not all be used up at once.

CENTER CREAM

8 c. sugar
2 c. glucose or corn sirup
3 c. water

Mix the sugar, glucose or corn sirup, and water and proceed in the same way as for fondant. Boil until the thermometer registers 234 or 236 degrees or a ball that is not quite so firm as for fondant will form in cold water. Pour on a moistened platter or slab to cool. Then cream in the same manner as for fondant, but allow more time for this part of the work, as the glucose does not cream rapidly. Just before it hardens, pour it into a crock or a bowl, place a damp cloth over the top of the bowl, and put away for a couple of days.

110. The molds for shaping center creams are formed in a thick layer of corn starch by means of a device that may be bought from a candy-making supply house or made at home. This device consists of a long strip with projections that may be pushed into the corn starch to make neatly shaped holes, or molds. These projections are spaced about 1 inch apart, so that the walls between the corn-starch molds will not fall down when the center-cream mixture is poured into them. A long stick, such as a ruler or a yardstick, and either corks of different sizes or plaster of Paris may be employed to make such a device. If corks are to be used, simply glue them to the stick, spacing them about 1 inch apart. If plaster of Paris is to be used, fill small receptacles about the size and shape of chocolate creams with a thin mixture of plaster of Paris and water and allow it to set. When hard, remove the plaster-of-Paris shapes and glue them to the stick, spacing them the same distance as mentioned for the corks. The home-made device will answer the same purpose as one that is bought, and is much less expensive.

111. When it is desired to make up the creams, sift corn starch into a pan to form a thick layer, making it perfectly level on top with the straight edge of a knife. Then make depressions, or molds, in the corn starch by pressing into it the device just described. Make as many rows of molds as the space will permit, but do not make them so close together as to weaken the walls between the molds. Melt some of the center cream in a double boiler, color and flavor as desired, and pour into the molds made in the corn starch. Allow the centers to remain until they become hard in the molds. Then pick them out, blow off the corn starch, and set aside until ready to coat. Continue making centers in this way until all the cream is used up, resifting the corn starch and making new molds each time. Then coat with chocolate in the usual way.

112. ORIENTALS.--Delicious chocolate creams known as orientals can be made by the amateur if a little care is exercised. It should be remembered, however, that these cannot be made successfully on a damp day and that it is somewhat difficult to make them in warm weather. A clear, cold day is required for satisfactory results. Unlike fondant, these creams must be made up at once, so it will be necessary to allow sufficient time not only for the cooking and creaming processes, but

also for the making and coating as well. After being made up, however, they should be allowed to stand for 3 or 4 days, as they, like many other cream candies, improve upon standing.

Since these centers are very sweet, a slightly bitter chocolate is the best kind with which to coat them. Confectioner's bitter-sweet chocolate will be found to be the most satisfactory, but if this cannot be procured, bitter chocolate may be mixed with sweet coating chocolate.

ORIENTALS

5 c. granulated sugar
2 c. water
1 tsp. glycerine
6 drops acetic acid
2 egg whites
Vanilla

Put the sugar, water, and glycerine over the fire and stir until the sugar is dissolved. Wash down the sides of the kettle with a cloth, and just as the mixture begins to boil, add the acetic acid. Place a cover over the pan and allow the mixture to boil until a temperature of 238 degrees is reached on the thermometer or a firm ball that can be easily held in the fingers will form. Pour out on a slab or a platter to cool, and when perfectly cool begin to work it as for fondant, but first beat the egg whites until they are stiff. As soon as the candy is collected into a mass, pour the egg whites over it, as shown in Fig. 16. Continue to work the candy until all of the egg white is worked in. Add the vanilla during this process. If the mixture seems stiff and the eggs do not work in, continue with a little patience, for they will eventually combine with the candy. Because of the eggs, oriental cream is whiter than bonbon cream, and so it is a little difficult to tell just when it is beginning to get creamy. However, it softens a little as it begins to set, just as fondant does. At this point work slowly, and as it hardens get it into a mass in the center of the slab. When completely worked, it will not be so hard as fondant. Make it up at once into small, round centers, and as they are made place them on pieces of oiled paper to become dry. Chopped nuts may be added to the filling if desired before it is made up. As soon as it is possible to handle the centers, coat them with chocolate in the usual way. Be careful to cover the entire surface with chocolate, for otherwise the quality of the center will deteriorate. A good plan is to wrap candies of this kind in waxed paper, especially if they are to be packed in boxes, for then they will not be so likely to crush.

[Illustration: FIG. 16]

113. UNCOOKED FONDANT.--A fairly satisfactory substitute for fondant can be made by moistening confectioner's sugar with egg white or sweet cream. A very fine sugar must be secured for this purpose or the candy will be granular, and even then the result will not be so satisfactory as in the case of cooked fondant properly made. Uncooked fondant, too, is more limited in its uses than cooked fondant, for it cannot be melted

and used for bonbons.

UNCOOKED FONDANT

XXXX sugar
Egg white or sweet cream

Roll and sift the sugar if it is lumpy, making it as fine as possible. Beat the egg white just enough to break it up or pour into a bowl the desired amount of sweet cream, remembering that very little liquid will moisten considerable sugar. Add the sugar a little at a time, beating all the while, until a sufficient amount has been used to make the mixture dry enough to handle with the fingers. Then flavor and color in any desired way and make up as if it were fondant.

MISCELLANEOUS CONFECTIONS

114. STUFFED DATES.--Dates from which the seeds have been removed and which have been filled with nuts or fondant or a combination of both are a confection that meets with much favor. The uncooked fondant is entirely satisfactory for this purpose, but if some of the other is on hand it will make an especially fine confection. Regardless of what is used for a filling, though, the preparation of such dates is the same.

First wash the dates in warm water and rinse them in cold water. Then, if there is time, spread them out in a single layer on a cloth and let them remain until they are entirely dry. Cut a slit in the side of each one with a knife and remove the seed. If nuts, such as English walnuts, are to be used for the filling, place half a nut meat in the cavity left by the seed and press the date together over it. In case fondant and nuts are to be used, chop the nuts and mix them with the fondant. Coconut may be used in place of the nuts if desired or the fondant may be used alone. Shape the fondant into tiny balls, press one tightly into the cavity left by the seed, and close the date partly over the filling. When all the dates have been stuffed, roll them in sugar, preferably granulated, and serve.

115. SALTED NUTS.--Nuts to which salt has been added are an excellent contrast to the sweet confections that have been described. At social gatherings, luncheons, dinners, etc., they are often served in connection with some variety of bonbon and many times they replace the sweet confection entirely. Peanuts and almonds are the nuts generally used for salting. If peanuts are to be salted, the unroasted ones should be purchased and then treated in exactly the same way as almonds. Before nuts are salted, they must first be browned, and this may be accomplished in three different ways: on the top of the stove, in the oven, and in deep fat. Preparing them in deep fat is the most satisfactory method, for by it all the nuts reach the same degree of brownness.

116. First blanch the nuts by pouring boiling water over them and allowing them to remain in the water until the skins can be removed;

then slip off the skins without breaking the nuts apart if possible. Spread the nuts out on a towel to dry.

If the deep-fat method of browning them is to be followed, have in a small saucepan or kettle a sufficient quantity of cooking fat or oil.

[Illustration: FIG. 17]

Allow it to become as hot as for frying doughnuts or croquettes, place the nuts in a sieve, and fry them in the fat until they become a delicate brown. Pour them out into a pan, sprinkle them with salt, cool, and serve.

To brown nuts on top of the stove, heat a heavy frying pan over a slow fire and into it put a small amount of fat. Add the nuts and stir constantly until they are browned as evenly as possible. This part of the work requires considerable time, for the more slowly it is done the less likely are the nuts to have burned spots. Salt the nuts before removing them from the pan, turn them out into a dish, cool, and serve.

It is more difficult to brown nuts equally by the oven method, but sometimes it is desired to prepare them in this way. Put the nuts with a little fat into a pan and set the pan in a hot oven. Stir frequently until they are well browned, salt, cool, and serve.

117. ORIENTAL DELIGHT.--An excellent confection that can be prepared without cooking is known as oriental delight. It is composed of fruit, nuts, and coconut, which are held together with egg white and powdered sugar. When thoroughly set and cut into squares, oriental delight appears as in Fig. 17.

ORIENTAL DELIGHT

1/2 lb. dates
1/2 lb. raisins
1/2 lb. pressed figs
1/2 c. shredded coconut
1/2 c. English walnuts
1 egg white
Powdered sugar

Wash all the fruits, put them together, and steam for about 15 minutes. Then put these with the coconut and nuts through a food chopper or chop them all in a bowl with a chopping knife. When the whole is reduced to a pulpy mass, beat the egg white slightly, add sufficient sugar to make a very soft paste, and mix with the fruit mixture. If it is very sticky, continue to add powdered sugar and mix well until it is stiff enough to pack in a layer in a pan. Press down tight and when it is set mark in squares, remove from the pan, and serve as a confection.

118. MARSHMALLOWS.--To be able to make marshmallows successfully is the desire of many persons. At first thought, this seems somewhat of a task, but in reality it is a simple matter if the directions are carefully

followed. Upon being cut into squares, the marshmallows may be served plain or they may be coated with chocolate or, after standing several days, dipped into a warm caramel mixture.

MARSHMALLOWS

8 tsp. gelatine
1-1/4 c. water
2 c. sugar
Few grains salt
1 tsp. vanilla
1/2 Tb. corn starch

Soak the gelatine in one-half of the water for 5 minutes. Cook the sugar and the remaining water until it will spin a thread when dropped from a spoon. Remove from the fire and add the gelatine. When partly cold, add the salt and the flavoring. Beat with an egg whip, cooling the mixture as rapidly as possible, until it is light and fluffy. When the mixture is thick, add the corn starch slowly, working it in thoroughly. Then pour out on a flat surface that is well dusted with confectioner's sugar. Let stand in a cool place until thoroughly chilled. Cut in squares by pressing the blade of a knife down through the mass, but do not slide it along when cutting. Remove the pieces, dust on all sides with powdered sugar, and serve.

119. NOUGAT.--The confection known as nougat consists usually of a paste filled with chopped nuts. Both corn sirup and honey are used in the preparation of this candy. Generally it is merely flavored with vanilla, but if chocolate flavoring is preferred it may be added.

NOUGAT

3 c. sugar
1-1/2 c. corn sirup
1/4 c. strained honey
1 c. water
2 egg whites
1 tsp. vanilla
2 c. nut meats

Put the sugar, corn sirup, honey, and water together and cook until a temperature of 260 degrees is reached or a brittle ball will form in water. Beat the egg whites stiff and pour the mass slowly into them, beating constantly until the mixture grows stiff and waxy. Then add the vanilla and nut meats. Mix well and pour into a small box or pan lined with waxed paper. If chocolate is to be used for flavoring, add the desired amount just before pouring the mixture into the pan. When it has cooled sufficiently, cut in squares or slices.

120. CANDIED PEEL.--Another favorite confection and one that is much used in connection with candies for social functions is candied orange, lemon, and grapefruit peel. After being removed from the fruit, the peel should be well scraped and then cut into thin strips. In this form, it

is ready to coat with sirup.

CANDIED PEEL

1/2 doz. lemons, oranges, or grapefruit
1/2 c. water
1 c. sugar

Remove the skin in quarters from the fruit, scrape off as much of the white as possible, and cut each piece of skin into narrow strips. Put these to cook in cold water, boil them until they may be easily pierced with a fork, and then drain off the water. Add the water to the sugar and cook until a thread will form when the sirup is dropped from a spoon. Add the cooked peel to the sirup and cook for 5 to 10 minutes. Drain and dredge in granulated sugar. Spread in a single layer to dry.

121. POP-CORN BALLS.--Pop corn in any form is always an attractive confection, especially to young persons. It is often stuck together with a sirup mixture and made into balls. In this form, it is an excellent confection for the holiday season.

To make pop-corn balls, first shell the corn and pop it. Then make a sirup with half as much water as sugar and cook it until it will spin a thread. Have the pop corn in a large bowl and pour the sirup over it, working quickly so that all the sirup can be used up while it is warm. To form the balls, take up a large double handful and press firmly together. If the sirup sticks to the hands, dip them into cold water so as to moisten them somewhat before the next handful is taken up. Work in this manner until all the corn is made into balls.

122. CRACKER JACK.--Another pop-corn confection that is liked by practically every one is cracker jack. In this variety, pop corn and peanuts are combined and a sirup made of molasses and sugar is used to hold them together.

CRACKER JACK

4 qt. popped corn
1 c. shelled, roasted peanuts
1 c. molasses
1/2 c. sugar

Put the popped corn and the peanuts together in a receptacle large enough to hold them easily. Cook the molasses and the sugar until the sirup spins a thread. Then pour this over the popped corn and peanuts and mix well until it becomes cold and hard.

SERVING CANDY

123. The best time to serve candy is when it will interfere least with the digestion, and this is immediately after meals. A dish of candy placed on the table with the dessert adds interest to any meal. It

should be passed immediately after the dessert is eaten.

Various kinds of bonbon dishes in which to serve candies are to be had, some of them being very attractive. Those having a cover are intended for candy that is to be left standing for a time, while open dishes should be used for serving. Fig. 18 shows candy tastefully arranged on a silver dish having a handle. Dishes made of glass or china answer the purpose equally as well as silver ones, and if a bonbon dish is not in supply a small plate will do very well. A paper or a linen doily on the dish or plate adds to the attractiveness, as does also the manner in which the candy is arranged.

[Illustration: FIG. 18: candies arranged on silver dish.]

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CONFECTIONS

EXAMINATION QUESTIONS

(1) What are confections?

(2) Discuss the use of confections in the diet of children and adults.

(3) (_a_) What food substance is found in the largest proportion in candy? (_b_) Are candies high or low in food value?

(4) Discuss briefly the kinds and qualities of sugar and their uses.

(5) What is the value of glucose in candy making?

(6) What kinds of flavorings are the most desirable?

(7) What care should be exercised in the use of colorings in candy?

(8) (_a_) What acids are used in candy making? (_b_) Why are these acids used?

(9) Of what value are milk, cream, and butter in the making of candy?

(10) What may be said of the selection of a pan for cooking candy?

(11) (_a_) What methods are used for testing candies? (_b_) Which of these methods is the most accurate?

(12) (_a_) How should the mixture be poured out to cool when a creamy candy is being made? (_b_) To what point should the sirup be cooled before the stirring is begun?

(13) (_a_) How should chocolate be melted? (_b_) How should coating with chocolate be done?

(14) How should waxed paper be cut for wrapping candies?

(15) Discuss the ingredients generally used for taffy.

(16) On what do good results in caramel making depend?

(17) What should be guarded against in the making of all cream candies?

(18) (_a_) What is fondant? (_b_) How may fondant be stored for future use?

(19) How should dates be prepared for stuffing?

(20) What is the best time for the serving of candy?

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BEVERAGES

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BEVERAGES IN THE DIET

NATURE AND CLASSES OF BEVERAGES

1. Throughout the lifetime of every person there is constant need for solid food to preserve health and prolong life; and, just as such food is necessary to satisfy the requirements of the body, so, too, is there need for water. As is well known, the composition of the body is such that it contains more liquid than solid material, the tissues and the bones weighing much less than the liquid. A tremendous amount of this liquid is continually being lost through the kidneys, through each pore in the skin, and even through every breath that is exhaled, and if continued good health is to be maintained this loss must be constantly made up. This loss is greater in very hot weather or in the performance of strenuous exercise than under ordinary conditions, which accounts for the fact that more than the usual amount of liquid must be supplied during such times. So necessary is liquid refreshment that the body cannot exist without it for any great length of time. In fact, if the supply were cut off so that no more could be obtained, the body would begin to use its own fluids and death would soon occur. A person can live for many days without solid food, but it is not possible to live for more than a very few days without drink.

2. Nature’s way of serving notice that the body is in need of liquid refreshment is through the sensation of thirst. Satisfying thirst not only brings relief, but produces a decidedly pleasant sensation; however, the real pleasure of drinking is not experienced until one has become actually thirsty.

The various liquids by which thirst may be slaked, or quenched, are known as _beverages_. The first one of these given to man was water,

and it is still the chief beverage, for it is used both alone and as a foundation for numerous other beverages that are calculated to be more tasty, but whose use is liable in some cases to lead to excessive drinking or to the partaking of substances that are injurious to health.

3. The beverages that are in common use may be placed in three general classes: _alcoholic_, _stimulating_, and _non-stimulating_. The alcoholic beverages include such drinks as beer, wine, whisky, etc., some of which are used more in one country than in another. In fact, almost every class of people known has an alcoholic beverage that has come to be regarded as typical of that class. Alcoholic fermentation is supposed to have been discovered by accident, and when its effect became known it was recognized as a popular means of supplying a beverage and some stimulation besides. Under stimulating beverages come tea, coffee, and cocoa. These are in common use all over the world, certain ones, of course, finding greater favor in some countries than in others. With the exception of cocoa, they provide very little food value. In contrast with these drinks are the non-stimulating beverages, which include fruit punches, soft drinks, and all the milk-and-egg concoctions. These are usually very refreshing, and the majority of them contain sufficient nourishment to recommend their frequent use.

WATER IN BEVERAGES

4. Many persons restrict the term beverages, contending that it refers to refreshing or flavored drinks. It should be remembered, however, that this term has a broader meaning and refers to any drink taken for the purpose of quenching thirst. Water is the simplest beverage and is in reality the foundation of nearly all drinks, for it is the water in them that slakes thirst. Flavors, such as fruit juice, tea, coffee, etc., are combined with water to make the beverages more tempting, and occasionally such foods as eggs, cream, and starchy materials are added to give food value; but the first and foremost purpose of all beverages is to introduce water into the system and thus satisfy thirst.

5. KINDS OF WATER.--Inasmuch as water is so important an element in the composition of beverages, every one should endeavor to become familiar with the nature of each of its varieties.

SOFT WATER is water that contains very little mineral matter. A common example of soft water is rainwater.

HARD WATER is water that contains a large quantity of lime in solution. Boiling such water precipitates, or separates, some of the lime and consequently softens the water. An example of the precipitation of lime in water is the deposit that can be found in any teakettle that has been used for some time.

MINERAL WATER is water containing a large quantity of such minerals as will go in solution in water, namely, sulphur, iron, lime, etc.

DISTILLED WATER is water from which all minerals have been removed. To

accomplish this, the water is converted into steam and then condensed. This is the purest form of water.

CARBONATED WATER is water that has had carbon-dioxide, or carbonic-acid, gas forced into it. The soda water used at soda fountains is an example of this variety. Carbonated water is bottled and sold for various purposes.

6. NECESSITY FOR PURE WATER.--The extensive use made of water in the diet makes it imperative that every effort be exerted to have the water supply as pure as possible. The ordinary city filter and the smaller household filter can be depended on to remove sand, particles of leaves, weeds, and such foreign material as is likely to drop into the water from time to time, but they will not remove disease germs from an unclean supply. Therefore, if there is any doubt about water being pure enough to use for drinking purposes, it should be boiled before it is used. Boiling kills any disease germs that the water may contain, but at the same time it gives the water a very flat taste because of the loss of air in boiling. However, as is mentioned in _Essentials of Cookery_, Part 1, the natural taste may be restored by beating the boiled water with an egg beater or by partly filling a jar, placing the lid on, and shaking it vigorously.

RELATION OF BEVERAGES TO MEALS

7. About one-third of all the water required each day is taken in the form of beverages with the meals. It was formerly thought that liquids dilute the gastric juice and so should be avoided with meals. However, it has been learned that beverages, either warm or cold, with the exception of an occasional case, may be taken with meals without injury. The chief point to remember is that it is unwise to drink beverages either too hot or too cold. For the best results, their temperature should be rather moderate.

8. Foods that may be dissolved in water can be incorporated in a beverage to make it nutritious. With many persons, as in the case of small children and invalids, this is often the only means there is of giving them nourishment. In serving beverages to healthy persons, the food value of the meal should be taken into consideration. The beverage accompanying a heavy meal should be one having very little food value; whereas, in the case of a light meal, the beverage can be such as will give additional nutrition. For instance, hot chocolate, which is very nutritious, would not be a good beverage to serve with a meal consisting of soup, meat, vegetables, salad, and dessert, but it would be an excellent drink to serve with a lunch that is made up of light sandwiches, salad, and fruit.

ALCOHOLIC BEVERAGES

9. ALCOHOLIC BEVERAGES are made by allowing yeast to ferment the starch or the sugar in a certain kind of food, thus producing acid and alcohol.

Grains and fruits are used oftenest for this purpose. In some cases, the fermentation is allowed to continue long enough to use up all the starch or sugar in the material selected, and in this event the resulting beverages are sour and contain a great deal of alcohol. In others, the fermentation is stopped before all the sugar or starch is utilized, and then the beverage is sweet and contains less alcohol. The higher the percentage of alcohol a beverage contains, the more intoxicating it is and the more quickly will a state of intoxication be reached by drinking it.

10. HARMFUL EFFECTS OF ALCOHOLIC BEVERAGES.--In years past, alcoholic beverages were considered to be a necessity for medicinal purposes in hospitals and in homes, but this use of them has been very greatly decreased. In fact, it is believed by most authorities that often more harm than good is done by using alcoholic beverages as a medical stimulant or as a carrier for some drug. As these drinks are harmful in this respect, so are they detrimental to health when they are taken merely as beverages. It is definitely known that alcohol acts as a food when it enters the body, for it is burned just as a carbohydrate would be and thus produces heat. That this action takes place very rapidly can be detected by the warmth that is produced almost immediately when the drink is taken. Some of it is lost through the breath and the kidneys without producing heat, and it also acts upon the blood vessels near the skin in such a way as to lose very quickly the heat that is produced. It is never conserved and used gradually as the heat from food is used. The taking of alcohol requires much work on the part of the kidneys, and this eventually injures them. It also hardens the liver and produces a disease known as hob-nailed, or gin, liver. In addition, if used continuously, this improper means of nourishing the body produces an excessive amount of fat. Because of these harmful effects on the various organs, its too rapid loss from the body, and the fact that it does not build tissue, alcohol is at best a very poor food and should be avoided on all occasions.

11. KINDS OF ALCOHOLIC BEVERAGES.--In spite of the truth that beverages containing alcohol are found to be harmful, many of them are in common use. Following are the names of these, together with a short account of their preparation:

BEER is an alcoholic beverage made from certain grains, usually barley, by malting the grain, boiling the product with hops, and finally fermenting it with yeast. The malting of grains, it will be remembered, is explained in _Cereals_. The hops are used to give the beer a desirable flavor. This beverage is characterized by a low percentage of alcohol, containing only 2 to 5 per cent., and consequently is not very intoxicating.

WINE is a beverage that is usually made from grapes, although berries and other small fruits are occasionally used. It contains from 7 to 16 per cent. of alcohol and is therefore more intoxicating than beer. The wines in which all of the sugar is fermented are known as _sour_, or _dry, wines_, while those in which not all of the sugar has been fermented are called _sweet wines_. Many classes of wines are made and

put on the market, but those most commonly used are claret, sherry, hock, port, and Madeira.

BRANDY is an alcoholic liquor distilled from wine. It is very intoxicating, for it consists of little besides alcohol and water, the percentage of alcohol varying from 40 to 50 per cent. Upon being distilled, brandy is colorless, but it is then stored in charred wooden casks, from which it takes its characteristic color.

GIN is a practically colorless liquor distilled from various grains and flavored with oil of juniper or some other flavoring substance, such as anise, orange peel, or fennel. It contains from 30 to 40 per cent. of alcohol. It is usually stored in glass bottles, which do not impart a color to it.

RUM is an alcoholic beverage made by fermenting cane sugar, molasses, cane juice, or the scum and waste from sugar refineries and then distilling the product. It contains from 45 to 50 per cent. of alcohol, and has a disagreeable odor when it is distilled. This odor, however, is removed by storing the rum in wooden receptacles for a long period of time.

CORDIALS are beverages made by steeping fruits or herbs in brandy. _Absinthe_, which is barred from the United States because it contains wormwood, a very injurious substance, is a well-known cordial. Besides being extremely intoxicating, it overstimulates the heart and the stomach if taken in even comparatively small quantities.

WHISKY is an alcoholic beverage obtained by distilling fermented grain several times until it has a strength of 40 to 50 per cent. of alcohol. Then it is flavored and stored in charred casks to ripen and become mellow, after which it has a characteristic color. As can readily be understood, distilled liquors contain the highest percentage of alcohol.

* * * * *

STIMULATING BEVERAGES

NATURE OF STIMULATING BEVERAGES

12. STIMULATING BEVERAGES are those which contain a drug that stimulates the nervous and the circulatory system; that is, one that acts on the nerves and the circulation in such a way as to make them active and alert. Common examples of these beverages are coffee, tea, and cocoa or chocolate. If the nerves are in need of rest, it is dangerous to stimulate them with such beverages, for, as the nervous system indirectly affects all the organs of the body, the effects of this stimulation are far-reaching. The immediate effect of the stimulant in these beverages is to keep the drinker awake, thus causing sleeplessness, or temporary insomnia. If tea and coffee are used habitually and excessively, headaches, dull brains, and many nervous troubles are liable to result.

13. The stimulant that is found in the leaves of tea is known as _theine_; that found in coffee beans, _caffeine_; and that found in cacao beans, from which cocoa and chocolate are made, _theobromine_. Each of these stimulants is extracted by the hot liquid that is always used to make the beverage. It is taken up by the liquid so quickly that the method used to prepare the beverage makes little difference as to the amount obtained. In other words, tea made by pouring water through the leaves will contain nearly as much of the stimulant as tea made by boiling the leaves.

14. In addition to the stimulant, tea and coffee contain _tannin_, or _tannic acid_, an acid that is also obtained from the bark of certain trees and used in the tanning of animal hides in the preparation of leather. Tannin is not taken so quickly from tea and coffee by the hot liquid used in preparing the beverage as is the stimulant, so that the longer tea leaves and coffee grounds remain in the liquid, the more tannic acid will be drawn out. This fact can be detected by the bitter flavor and the puckery feeling in the mouth after drinking tea that has been allowed to remain on the leaves or coffee that has stood for some time on the grounds. Tannic acid has a decidedly bad effect on the digestion in the stomach, so that if improperly prepared tea or coffee is indulged in habitually, it may cause stomach disorders.

TABLE I

STIMULANT AND TANNIC ACID PRESENT IN STIMULATING BEVERAGES

Beverage		Quantity of Stimulant Grains	Quantity of Tannic Acid Grains
Coffee	Caffeine	2 to 3	1 to 2
Tea	Theine	1 to 2	1 to 4
Cocoa or chocolate	Theobromine	1 to 1-1/2	1/2 to 1

15. The quantity of stimulant and tannic acid contained in an ordinary cup of tea, coffee, and cocoa or chocolate is given in Table I. As this table shows, the quantity, which is given in grains, does not vary considerably in the different beverages and is not present in such quantity as to be harmful, unless these beverages are indulged in to excess.

To reduce the quantity of caffeine contained in coffee has been the aim of many coffee producers. As a result, there are on the market a number of brands of coffee that have been put through a process that removes practically all the caffeine. The beverage made from coffee so treated is less harmful than that made from ordinary coffee, and so far as the flavor is concerned this loss of caffeine does not change it.

16. Neither tea nor coffee possesses any food value. Unless sugar or cream is added, these beverages contain nothing except water, flavor,

stimulant, and tannic acid. Chocolate and cocoa, however, are rich in fat, and as they are usually made with milk and sugar they have the advantage of conveying food to the system. Because of their nature, tea and coffee should never be given to children. Cocoa and chocolate provide enough food value to warrant their use in the diet of young persons, but they should not be taken in too great quantity because of the large amount of fat they contain. Any of these beverages used in excessive amounts produces the same effect as a mild drug habit. Consequently, when a person feels that it is impossible to get along without tea or coffee, it is time to stop the use of that beverage.

* * * * *

COFFEE

HISTORY AND PRODUCTION

17. COFFEE is the seed of the coffee tree, which in its wild state grows to a height of 20 feet, but in cultivation is kept down to about 10 or 12 feet for convenience in gathering the fruit. Coffee originated in Abyssinia, where it has been used as a beverage from time immemorial. At the beginning of the 15th century, it found its way into Arabia, where it was used by the religious leaders for preventing drowsiness, so that they could perform religious ceremonies at night. About 100 years later it came into favor in Turkey, but it was not until the middle of the 17th century that it was introduced into England. Its use gradually increased among common people after much controversy as to whether it was right to drink it or not. It is now extensively grown in India, Ceylon, Java, the West Indies, Central America, Mexico, and Brazil. The last-named country, Brazil, furnishes about 75 per cent. of the coffee used in the United States and about 60 per cent. of the world's supply.

18. Coffee is a universal drink, but it finds more favor in some countries than others. The hospitality of a Turkish home is never thought to be complete without the serving of coffee to its guests; however, the coffee made by the Turks is not pleasant except to those who are accustomed to drinking it. As prepared in Turkey and the East, a small amount of boiling water is poured over the coffee, which is powdered and mixed with sugar, and the resulting beverage, which is very thick, is served in a small cup without cream. The French make a concoction known as _cafØ an lait_, which, as explained in _Essentials of Cookery_, Part 2, is a combination of coffee and milk. These two ingredients are heated separately in equal proportions and then mixed before serving. This is a very satisfactory way in which to serve coffee if cream cannot be obtained.

19. OBTAINING THE COFFEE SEEDS.--The seeds of the coffee tree are enclosed in pairs, with their flat surfaces toward each other, in dark, cherry-like berries. The pulp of the berry is softened by fermentation and then removed, leaving the seeds enclosed in a husk. They are then separated from the husks by being either sun-dried and rolled or reduced to a soft mass in water with the aid of a pulping machine. With the husks removed, the seeds are packed into coarse cloth bags and

distributed.

20. ROASTING THE COFFEE BEANS.--The next step in the preparation of coffee for use is the roasting of the coffee beans. After being separated from the husks, the beans have a greenish-yellow color, but during the roasting process, when they are subjected to high temperature and must be turned constantly to prevent uneven roasting, they turn to a dark brown. As the roasting also develops the flavor, it must be done carefully. Some persons prefer to buy unroasted coffee and roast it at home in an oven, but it is more economical to purchase coffee already roasted. In addition, the improved methods of roasting produce coffee of a better flavor, for they accomplish this by machinery especially devised for the purpose.

21. GRINDING THE COFFEE BEANS.--During the roasting process there is developed an aromatic volatile oil, called _caffeol_, to which the flavor of the coffee is due. This oil is very strong, but upon being exposed to the air it passes off and thus causes a loss of flavor in the coffee. For this reason, roasted coffee should be kept in air-tight cans, boxes, or jars. Before it is used, however, it must be ground. The grinding of the coffee beans exposes more surface and hence the flavor is more quickly lost from ground than unground coffee. Because of this fact and because ground coffee can be adulterated very easily, it is not wise to buy coffee already ground. If only a small quantity is bought at a time and it can be used up at once, the grinding may be done by the grocer, but even in such a case the better plan is to grind it immediately before using it.

22. The method by which the coffee is to be prepared for drinking will determine to a large extent the way in which the coffee beans must be ground. When coffee is to be made by a method in which the grounds are not left in the water for any length of time, the beans must be ground very fine, in fact, pulverized, for the flavor must be extracted quickly. For other purposes, such as when it is to be made in a percolator, the beans need not be ground quite so fine, and when it is to be made in an ordinary coffee pot they may be ground very coarse.

23. For use in the home, simple coffee mills that will grind coffee as coarse or as fine as may be desired are to be had. Fig. 1 shows two of the common types of home coffee mills.

[Illustration: FIG. 1]

The one shown in (_a_) is fastened to a board so that it can be attached to the wall. The coffee to be ground is put in the chamber _a_, from which it is fed to the grinding rolls, and the ground coffee drops into the chamber _b_. The grinding rolls are adjusted to the desired fineness by the notched arrangement on the end of the shaft.

The coffee mill shown in (_b_) may be placed on a table top or some other flat surface, but it operates on the same principle as the other. The coffee beans are placed in the chamber at the top, and the ground coffee drops into the drawer _a_ at the bottom. The adjustment of the

grinding rolls is regulated by the notched head at the end of the vertical shaft.

24. ADULTERATION OF COFFEE.--As in the case of numerous other foods, attempts are often made to adulterate coffee. Since the Pure Food Laws have been enforced, there is not so much danger of adulteration in a product of this kind; still, every housewife should be familiar with the ways in which this beverage may be reduced in strength or quality, so that she may be able to tell whether she is getting a good or an inferior product for her money.

Coffee may be adulterated in a number of ways. Ground coffee is especially easy to adulterate with bread crumbs, bran, and similar materials that have been thoroughly browned. Many of the cheaper coffees are adulterated with chicory, a root that has a flavor similar to that of coffee and gives the beverages with which it is used a reddish-brown color. Chicory is not harmful; in fact, its flavor is sought by some people, particularly the French. The objection to it, as well as to other adulterants, is that it is much cheaper than coffee and the use of it therefore increases the profits of the dealer. The presence of chicory in coffee can be detected by putting a small amount of the ground coffee in a glass of water. If chicory is present, the water will become tinged with red and the chicory will settle to the bottom more quickly than the coffee.

PREPARATION OF COFFEE

25. SELECTION OF COFFEE.--Many varieties of coffee are to be had, but Mocha, Java, and Rio are the ones most used. A single variety, however, is seldom sold alone, because a much better flavor can be obtained from _blend coffee_, by which is meant two or more kinds of coffee mixed together.

It is usually advisable to buy as good a quality of coffee as can be afforded. The more expensive coffees have better flavor and greater strength than the cheaper grades and consequently need not be used in such great quantity. It is far better to serve this beverage seldom and to have what is served the very best than to serve it so often that a cheap grade must be purchased. For instance, some persons think that they must have coffee for at least two out of three daily meals, but it is usually sufficient if coffee is served once a day, and then for the morning or midday meal rather than for the evening meal.

After deciding on the variety of coffee that is desired, it is well to buy unground beans that are packed in air-tight packages. Upon receiving the coffee in the home, it should be poured into a jar or a can and kept tightly covered.

26. NECESSARY UTENSILS.--Very few utensils are required for coffee making, but they should be of the best material that can be afforded in order that good results may be had. A coffee pot, a coffee percolator, and a drip pot, or coffee biggin, are the utensils most frequently used

for the preparation of this beverage.


[Illustration: FIG. 2]

27. If a COFFEE POT is preferred, it should be one made of material that will withstand the heat of a direct flame. The cheapest coffee pots are made of tin, but they are the least desirable and should be avoided, for the tin, upon coming in contact with the tannic acid contained in coffee, sometimes changes the flavor. Coffee pots made of enamelware are the next highest in price. Then come nickel-plated ones, and, finally, the highest-priced ones, which are made of aluminum. The usual form of plain coffee pot is shown in Fig. 2.


[Illustration: FIG. 3]

28. PERCOLATORS are very desirable for the making of coffee, for they produce excellent results and at the same time make the preparation of coffee easy. Those having an electric attachment are especially convenient. One form of percolator is shown in Fig. 3. In this percolator, the ground coffee is put in the filter cup _a_ and the water in the lower part of the pot _b_. The water immediately passes into the chamber _c_, as shown by the arrows. In this chamber, which is small, it heats rapidly and then rises through the vertical tube _d_. At the top _e_, it comes out in the form of a spray, strikes the glass top, and falls back on a perforated metal plate _f_, called the spreader. It then passes through this plate into the filter cup containing the grounds, through which it percolates and drops into the main chamber. The circulation of the water continues as long as sufficient heat is applied, and the rate of circulation depends on the degree of heat.

29. The DRIP POT, or _coffee biggin_, as it is sometimes called, one type of which is shown in Fig. 4, is sometimes preferred for the making of coffee. This utensil is made of metal or earthenware and operates on the same principle as a percolator. The ground coffee is suspended above the liquid in a cloth bag or a perforated receptacle and the water percolates through it.


[Illustration: FIG. 4]

30. In case a more complicated utensil than any of those mentioned is used for the making of coffee, the directions that accompany it will have to be followed. But no matter what kind of utensil is selected for the preparation of coffee, it should be thoroughly cleaned each time it is used. To clean it, first empty any coffee it contains and then wash every part carefully and scald and dry it. If the utensil is not clean, the flavor of the coffee made in it will be spoiled.

31. METHODS OF MAKING COFFEE.--Several methods are followed in the making of coffee, the one to select depending on the result desired and the kind of utensil to be used. The most common of these methods are: _boiling_, which produces a decoction; _infusion_, or _filtration_, which consists in pouring boiling water over very finely ground coffee in order to extract its properties; and _percolating_, in which boiling

water percolates, or passes through, finely ground coffee and extracts its flavor. For any of these methods, soft water is better than water that contains a great deal of lime. Many times persons cannot understand why coffee that is excellent in one locality is poor in another. In the majority of cases, this variation is due to the difference in the water and not to the coffee. From 1 to 2 tablespoonfuls of coffee to 1 cupful of water is the usual proportion followed in making coffee.

32. BOILED COFFEE.--Without doubt, coffee is more often boiled in its preparation than treated in any other way. Usually, an ordinary coffee pot is all that is required in this method of preparation. The amount of ground coffee used may be varied to obtain the desired strength.

BOILED COFFEE
(Sufficient to Serve Six)

1 c. cold water
1/2 c. ground coffee
3 c. boiling water

After scalding the coffee pot, put 1/2 cupful of the cold water and the ground coffee into it. Stir well and then add the boiling water. Allow it to come to the boiling point and boil for 3 minutes. Pour a little of the coffee into a cup to clear the spout of grounds, add the remaining cupful of cold water, and put back on the stove to reheat, but not to boil. When hot, serve at once. Never allow the liquid to stand on the grounds for any length of time, for the longer it stands the more tannic acid will be drawn out.

33. As coffee made by boiling is usually somewhat cloudy, it may be cleared in one way or another. The last cold water is added for this purpose, for as it is heavier than the warm liquid it sinks to the bottom and carries the grounds with it. Coffee may also be cleared by stirring a small quantity of beaten raw egg, either the white or the yolk, or both, into the grounds before the cold water is added to them. One egg will clear two or three potfuls of coffee if care is exercised in its use. What remains of the egg after the first potful has been cleared should be placed in a small dish and set away for future use. A little cold water poured over it will assist in preserving it. If the egg shells are washed before the egg is broken, they may be crushed and added to the grounds also, for they will help to clear the coffee. The explanation of the use of egg for this purpose is that it coagulates as the coffee heats and carries the particles of coffee down with it as it sinks.

34. Another very satisfactory way in which to make boiled coffee is to tie the ground coffee loosely into a piece of cheesecloth, pour the boiling water over it, and then let it boil for a few minutes longer than in the method just given. Coffee prepared in this manner will be found to be clear and therefore need not be treated in any of the ways mentioned.

35. FILTERED COFFEE.--When it is desired to make coffee by the filtering

process, the coffee must be ground into powder. Then it should be made in a drip, or French, coffee pot. If one of these is not available, cheesecloth of several thicknesses may be substituted. The advantage of making coffee by this method is that the coffee grounds may sometimes be used a second time.

FILTERED COFFEE
(Sufficient to Serve Six)

1/2 c. powdered coffee
1 qt. boiling water

Place the coffee in the top of the drip pot, pour the boiling water over it, and allow the water to drip through into the vessel below. When all has run through, remove the water and pour it over the coffee a second time. If cheesecloth is to be used, put the coffee in it, suspend it over the coffee pot or other convenient utensil, and proceed as with the drip pot.

36. PERCOLATED COFFEE.--The coffee used for percolated coffee should be ground finer than for boiled coffee, but not so fine as for filtered coffee. This is perhaps the easiest way in which to prepare coffee and at the same time the surest method of securing good coffee.

PERCOLATED COFFEE
(Sufficient to Serve Six)

1/2 c. finely ground coffee
1 qt. cold water

Place the coffee in the perforated compartment in the top of the percolator and pour the cold water in the lower chamber. As the water heats, it is forced up through the vertical tube against the top. It then falls over the coffee and percolates through into the water below. This process begins before the water boils, but the hotter the water becomes the more rapidly does it percolate through the coffee. The process continues as long as the heat is applied, and the liquid becomes stronger in flavor as it repeatedly passes through the coffee. When the coffee has obtained the desired strength, serve at once.

37. AFTER-DINNER COFFEE.--After a rather elaborate meal, a small cup of very strong, black coffee is often served. To prepare after-dinner coffee, as this kind is called, follow any of the methods already explained, but make it twice as strong as coffee that is to accompany the usual meal. Sugar and cream may be added to after-dinner coffee, but usually this coffee is drunk black and unsweetened.

38. VIENNA COFFEE.--An especially nice way in which to serve coffee is to combine it with boiled milk and whipped cream. It is then known as Vienna coffee. The accompanying directions are for just 1 cup, as this is prepared a cupful at a time.

VIENNA COFFEE

(Sufficient to Serve One)

1/4 c. boiled milk
3 Tb. whipped cream
1/2 c. hot filtered coffee, or coffee prepared by any method

Place the boiled milk in a cup, add the whipped cream, and fill the cup with the hot coffee.

39. ICED COFFEE.--Persons fond of coffee find iced coffee a most delicious hot-weather drink. Iced coffee is usually served in a glass, as shown in Fig. 5, rather than in a cup, and when whipped cream is added an attractive beverage results.

To prepare iced coffee, make coffee by any desired method, but if the boiling method is followed be careful to strain the liquid so that it is entirely free from grounds. Cool the liquid and then pour into glasses containing cracked ice. Serve with plain cream and sugar or with a tablespoonful or two of whipped cream. If desired, however, the cream may be omitted and the coffee served with an equal amount of milk, when it is known as _iced cafØ au lait_.

40. LEFT-OVER COFFEE.--The aim of the person who prepares coffee should be to make the exact quantity needed, no more nor no less, and this can usually be done if directions are carefully followed. However, if any coffee remains after all are served, it should not be thrown away, as it can be utilized in several ways. Drain the liquid from the grounds as soon as possible so that the flavor will not be impaired.

[Illustration: FIG. 5]

If desired, left-over coffee may be added to fresh coffee when it is prepared for the next meal or, in hot weather, it may be used for iced coffee. It may also be used to flavor gelatine, which, when sweetened and served with whipped cream, makes an excellent dessert. Again, left-over coffee is very satisfactory as a flavoring for cake icing, for custards, or for whipped cream that is to be served with desserts. When coffee is desired for flavoring, it should be boiled in order to evaporate some of the water. Very good cake is made by using left-over coffee for the liquid and spices for the flavoring.

SERVING COFFEE

41. The serving of coffee may be done in several ways, but, with the exception of iced coffee, this beverage should always be served as hot as possible. As can well be imagined, nothing is more insipid than lukewarm coffee. Therefore, coffee is preferably made immediately before it is to be served. Sugar and cream usually accompany coffee, but they may be omitted if they are not desired.

Coffee may be served with the dinner course, with the dessert, or after the dessert. When it is served with the dinner course or the dessert, a

coffee cup or a tea cup of ordinary size is used; but when it is served after the dessert, a demi-tasse, or small cup that holds less than half the amount of the other size, is preferable. Usually, after-dinner coffee, or _cafØ noir_, as such black coffee is called, rather than coffee with cream and sugar, is served after the dessert course of a heavy dinner because it is supposed to be stimulating to the digestion.

The pouring of coffee may be done at the table or in the kitchen. If it is done at the table, the person serving should ask those to be served whether or not they desire cream and sugar, and then serve accordingly. If it is done before the coffee is brought to the table, the cream and sugar should be passed, so that those served may help themselves to the desired amount. Care should always be taken in the serving of coffee not to fill the cup so full that it will run over or that it will be too full to handle easily when the cream and sugar are added.

* * * * *

TEA

HISTORY AND PRODUCTION

42. TEA consists of the prepared leaves or leaf buds of a plant known as the tea plant and is used as one of the three stimulating beverages. This plant is grown in China, Japan, India, Ceylon, and the East Indies, and to a small extent in South Carolina. There are two distinct varieties of tea, and each one may be used for the preparation of either green or black tea. The leaves of the tea plant, which are what is used for making the beverage, are gathered four times a year from the time the plants are 4 years old until they are 10 or 12 years old. Then the plants are pulled up and new ones planted. Upon being gathered, the leaves are put through a series of processes before they are ready for use. During this treatment, various modifications of flavor are developed and the leaves are changed in color to black or green, depending on the process used.

43. It is surprising to most persons to learn that tea was known in China for many years before people began to make a beverage of it. The first record of its use as a beverage was probably in the 6th century, when an infusion of tea leaves was given to a ruler of the Chinese Empire to cure a headache. A century later, tea had come into common use as a beverage in that country. As civilization advanced and new countries were formed, tea was introduced as a beverage, and today there is scarcely a locality in which it is not commonly used.

44. CLASSIFICATION OF TEA AS TO QUALITY.--The position of the leaf on the tea plant determines the quality of the tea. The farther from the top, the coarser are the leaves and the poorer is the quality. On the other hand, the smaller the leaves and the nearer the top, the better is the quality. In the very best qualities of tea, the buds of the plant are included with the tiny top leaves.

45. Tea that is raised in China is graded in a particular way, and it

will be well to understand this grading. The top buds are used entirely for a variety known as _flowery pekoe_, but this is seldom found in our markets. The youngest leaves next to the buds are made into a tea called _orange pekoe_; the next older leaves are used for _pekoe_; the third, for _souchong first_; the fourth, for _souchong second_; the fifth, for _congou_; and if there is another leaf, it is made into a tea known as _bohea_. Sometimes the first three leaves are mixed, and when this is done the tea is called _pekoe_. If they are mixed with the next two, the tea is called _souchong pekoe_. The laws controlling the importation of tea require that each shipment be tested before it passes the custom house, to determine whether or not it contains what the label claims for it.

46. VARIETIES OF TEA.--The teas that are put on the market are of two general varieties, _black tea_ and _green tea_. Any quality of tea or tea raised in any country may be made into these two kinds, for, as has been mentioned, it is the method of preparation that is accountable for the difference. A number of the common brands of tea are blends or mixtures of green and black tea. These, which are often called _mixed teas_, are preferred by many persons to the pure tea of either kind.

47. BLACK TEA is made by fermenting the tea leaves before they are dried. This fermentation turns them black and produces a marked change in their flavor. The process of preparation also renders some of the tannin insoluble; that is, not so much of it can be dissolved when the beverage is made. Some well-known brands of black tea are _China congou_, or _English breakfast_, _Formosa_, _oolong_, and the various _pekoes_. The English are especially fond of black tea, and the people of the United States have followed their custom to the extent that it has become a favorite in this country.

48. GREEN TEA is made by steaming the leaves and then drying them, a process that retains the green color. With tea of this kind, all fermentation of the leaves is carefully avoided. Some familiar kinds of green tea are _hyson_, _Japan_, and _gunpowder_. The best of these are the ones that come from Japan.

PREPARATION OF TEA

49. SELECTION OF TEA.--In the course of its preparation, tea is rolled either into long, slender pieces or into little balls. Knowing this, the housewife should be able to detect readily the stems and other foreign material sometimes found in teas, especially the cheaper varieties. Such teas should be avoided, for they are lacking not only in flavor but also in strength. If economy must be practiced, the moderately expensive grades will prove to be the best ones to buy.

50. METHODS OF MAKING TEA.--Upon steeping tea in hot water, a very pleasant beverage results. If this is properly made, a gentle stimulant that can be indulged in occasionally by normal adults without harmful results can be expected. However, the value of tea as a beverage has at all times been much overestimated. When it is served as afternoon tea,

as is frequently done, its chief value lies in the pleasant hospitality that is afforded by pouring it. Especially is this the case in England, where the inhabitants have adopted the pretty custom of serving afternoon tea and feel that guests have not received the hospitality of the home until tea has been served. Through their continued use of this beverage, the English have become expert in tea making.

51. The Russians are also adepts so far as the making of tea is concerned. They use a very good kind of tea, called _caravan tea_, which is packed in lead-covered packages and brought to them by caravans. This method of packing and delivery is supposed to have a ripening effect on the leaves and to give them an unusually good flavor. For making tea, the Russians use an equipment called a _samovar_. This is an urn that is constantly kept filled with boiling water, so that tea can be served to all visitors or callers that come, no matter what time of day they arrive.

52. Most persons, however, make tea into a beverage by steeping it in boiling water or by placing it in a tea ball or some similar utensil and then allowing it to stand in boiling water for a short time. Whichever method of preparation is followed, the water must be at the boiling point and it must be freshly boiled. Water that has been boiled for any length of time becomes very insipid and flat to the taste and affects the flavor of the tea. Tea leaves that have been used once should never be resteeped, for more tannin is extracted than is desirable and the good tea flavor is lost, producing a very unwholesome beverage. As a rule, 1 to 1-1/2 teaspoonfuls of tea to 1 cupful of water is the proportion followed in tea making.

53. STEEPED TEA.--When tea is to be steeped, a teapot is used. That the best results may be secured, the teapot should always be freshly scalded and the water freshly boiled.

STEEPED TEA
(Sufficient to Serve Six)

2 Tb. tea
1 qt. boiling water

Scald the teapot. Put the tea into the teapot and pour the boiling water over it. Let stand on the back of the stove for 3 minutes, when a beverage of sufficient strength will be formed. Strain the beverage from the tea leaves and serve at once.

[Illustration: FIG. 6]

54. AFTERNOON TEA.--When tea is desired for afternoon serving or when it is to be prepared at the table, a _tea ball_ is the most satisfactory utensil to use. This is a perforated silver or aluminum ball, such as shown in Fig. 6, which opens by means of a hinge and into which the tea is placed. For convenience in use, a chain is attached to the ball and ends in a ring that is large enough to slip over the finger. Some teapots contain a ball attached to the inside of the lid and suspended

inside the pot. Utensils of this kind are very convenient, for when the tea made in them becomes strong enough, the leaves may be removed without pouring off the tea.

To prepare afternoon tea with a tea ball, put 1 or 2 teaspoonfuls of tea in the ball, fasten it securely, and place it in a cup. Then pour enough freshly boiled water over the ball to fill the cup to the desired height. Allow the ball to remain in the water until the desired strength is attained and then remove it. If more than 2 or 3 persons are to be served, it will be necessary to refill the ball.

55. ICED TEA.--Perhaps one of the most refreshing drinks for warm weather is iced tea. A tea that is especially blended for this purpose and that is cheaper in price than other tea may be purchased. Slices of lemon or crushed mint leaves add much to the flavor of the tea and are often served with it.

Prepare tea by steeping it, but make it double strength. Strain it from the leaves and allow it to become cool. Then pour it into glasses containing cracked ice. Serve with sugar and slices of lemon or mint leaves.

56. LEFT-OVER TEA.--Tea that remains after all persons are served need not be wasted if it is poured off the leaves at once. Such tea is satisfactory for iced tea, or it may be combined with certain fruit juices in the preparation of various cold beverages. However, there are not many satisfactory uses for left-over tea; so it is best to take pains not to make more than will be required for one time.

SERVING TEA

[Illustration: FIG. 7]

57. Tea may be served as an accompaniment to meals or with small sandwiches, dainty cakes, or macaroons as an afternoon ceremony. If it is served with meals and is poured at the table, the hostess or the one pouring asks those to be served whether they desire sugar and cream and then uses these accompaniments accordingly. In the event that it is brought to the table poured, the sugar and cream are passed and those served may help themselves to what they desire. Lemon adds much to the flavor of tea and is liked by most persons. A dish of sliced lemon may be passed with the cream and sugar or placed where the hostess may add it to the tea. The Russians, who are inveterate tea drinkers, prepare this beverage by putting a slice of lemon in the cup and then pouring the hot tea over it. If this custom is followed, the lemons should be washed and sliced very thin and the seeds should be removed from the slices. The flavor may also be improved by sticking a few cloves in each slice of lemon; or, if the clove flavor is desired, several cloves may be put in the teapot when the tea is made. Fig. 7 shows slices of lemons ready to be served with tea. Some of them, as will be observed, have cloves stuck in them.

Lemon is almost always served with iced tea, for it adds a delightful flavor. If it is not squeezed into the glass, it should be cut into quarters or eighths lengthwise and then cut across so that small triangular pieces are formed. These are much easier to handle than whole slices.

[Illustration: FIG. 8]

58. In the serving of afternoon tea, the pouring of the tea is the main thing, and the remainder of the service simply complements this pleasant ceremony. Tiny sandwiches, small cakes, or macaroons usually accompany the tea, while such confections as candied orange peel, stuffed dates, or salted nuts are often served also. When sandwiches are used, they may be merely bread-and-butter sandwiches or they may contain marmalade or any desired filling. The principal requirement is that they be made as small and thin as possible, so that they will be extremely dainty in appearance.

59. A _tea cozy_ is a convenient device to use when tea is served from the pot. It consists of a padded cap, or cover, that may be slipped over the teapot to prevent the heat from escaping after the tea is infused. It is made of several thicknesses of material in a shape and size that will slip over the teapot easily and can then be removed when the tea is to be poured. This can be made very attractive by means of a nicely embroidered cover.

60. Fig. 8 shows an attractive table that may be used for serving tea. The top folds over vertically, so that when the table is not in use it may be disposed of by placing it against the wall of a room. This table holds nothing except the pot containing the tea, which must be made in the kitchen and placed in the pot before it is brought to the table, the sugar and cream, the teacups, and the lemon. Sandwiches, wafers, or cakes that are to be served with the tea should be passed to the guests.

[Illustration: FIG. 9]

61. Fig. 9 shows a tea wagon and the equipment for making tea, with the sandwiches and cakes to be served arranged on a muffin stand, or Lazy Susan. When tea is to be made with an equipment of this kind, the water is heated in the little kettle by means of the alcohol burner. The can with the long spout contains an extra supply of alcohol with which to keep the burner filled. The tea ball, which is in the little glass, is filled with tea and the boiling water is poured over it into each cup. The ball is allowed to remain until the tea is of the desired strength, when it is removed and used for another cup, provided sufficient strength remains in the tea leaves.

The silver tea caddy at the back of the wagon contains the tea, and lemon with a fork for serving it is on a small plate near the front of the wagon. Napkins and plates for the cakes and sandwiches are on the lower part of the wagon. The napkins and plates are first passed; then the tea is served with the sandwiches, after which cakes are served.

* * * * *

COCOA AND CHOCOLATE

NATURE AND SELECTION

[Illustration: FIG. 10]

62. COCOA and CHOCOLATE are made from the fruit of the cacao, or chocolate, tree. This tree is native to Mexico, where cocoa was first used as a beverage, but it is also grown in South America and the West Indies. The fruit of this tree was named _cocoa Theobroma_, which means "food for the gods," because of its excellent flavor. The original natives of Mexico and Peru used cocoa in place of money. When the Spanish invaded these countries, they learned its use and took it back to Spain, where it is still a popular beverage. In many localities in Spain it became a fashionable morning drink, but it was also served at other times.

63. PRODUCTION OF COCOA AND CHOCOLATE.--The fruit of the cacao tree is in the form of pods from 6 to 10 inches in length and 3 to 4 inches in diameter. These pods are filled with a white, pulpy mass in which are embedded from twenty to forty seeds about twice the size and very much the shape of kidney beans. Fig. 10 shows the three stages of the treatment through which the seeds are put before they can be used for a beverage. After they are removed from the pod, they are fermented and then dried, when they appear as at _a_. In this form they are packed in bags and distributed. The beans are then roasted to develop their flavor and are crushed into small pieces called _cocoa nibs_, as shown at _b_. The cocoa nibs are then ground fine, when they become almost a liquid mass because of the very large amount of fat contained in cocoa. To make the ordinary _bitter chocolate_ used so extensively for cooking purposes, this mass is run into shallow pans, where it hardens as it cools. It is often flavored and sweetened and then forms the confection known as _sweet chocolate_. The application of pressure to bitter chocolate extracts considerable fat, which is known as _cocoa butter_ and is used largely in creams and toilet preparations. The remaining material is ground into a powder, as shown at _c_, and becomes the _commercial cocoa_.

To prevent the formation of a large amount of sediment in the bottom of the cup, cocoa is treated with various kinds of alkali. Some of these remain in the cocoa and are supposed to be harmful if it is taken in any quantity. The cocoas that are treated with alkali are darker in color than the others. The Dutch cocoas are considered to be the most soluble and also contain the most alkali.

64. SELECTION OF COCOA AND CHOCOLATE.--Chocolate is usually pure in the form in which it is sold, because it does not offer much chance for adulteration. However, the volume of cocoa can be easily increased by cheaper materials, such as starch, ground cocoa shells, etc. Cocoa so adulterated should be avoided if possible. Generally the best brands, although higher in price than others, are free from adulteration, and

from these a selection should be made. The particular brand of chocolate or cocoa to buy must be governed by the taste of those to whom it is to be served.

PREPARATION OF COCOA AND CHOCOLATE

65. As a beverage, cocoa probably has greater use than chocolate; still there are some who prefer the flavor of chocolate to that of cocoa. Directions for preparing beverages from both of these materials are given, with the intention that the housewife may decide for herself which one she prefers to use. For either one, any ordinary saucepan or kettle may be used, but those made of enamel or aluminum are best. Of these two materials, aluminum is the better, for milk is less liable to scorch in a vessel of this kind than in one of any other material.

66. When chocolate is to be used for a beverage, the amount required varies with the strength desired. Recipes for bitter chocolate usually give the amount in squares, but no difficulty will be experienced in determining the amount, for the cakes of chocolate are marked in squares of 1 ounce each. If sweet chocolate is used, less sugar should, of course, be added to the beverage.

67. In all but the first of the recipes that follow, it will be observed that milk is used for a part of the liquid. The quantity given makes an excellent beverage, but more or less may be used if desired. However, if the quantity of milk is changed, the quantity of water should be changed accordingly. Condensed or evaporated milk may be utilized very nicely in the making of these two beverages. Milk of this kind should, of course, be diluted, a half-pint can requiring 2 to 3 cupfuls of water. If condensed milk is used, less sugar than the recipe calls for may be employed. A few drops of vanilla added just before serving always improves the flavor of cocoa or chocolate.

68. PLAIN COCOA.--The quickest and cheapest method of making cocoa is explained in the recipe that follows. It may be prepared in a saucepan and poured into the cups or it may be made in the cups themselves. To improve the flavor of cocoa made in this way, as well as add to its food value, cream should be served with it. Salt also is used to improve the flavor of all cocoa and chocolate beverages.

PLAIN COCOA
(Sufficient to Serve Six)

2-1/2 Tb. cocoa
2-1/2 Tb. sugar
Few grains of salt
4 c. boiling water

Mix the cocoa, sugar, and salt, form into a paste by stirring in a little of the water, and then add the remainder of the water. Serve with cream.

69. BREAKFAST COCOA.--Delicious cocoa can be made by following the directions given in the accompanying recipe. Here milk and water are used in equal amounts. When milk is used in the preparation of this beverage, a scum of albumin is likely to form on the top of the cups unless care is taken. To prevent this, the cocoa, as soon as it is prepared, should be beaten with a rotary egg beater until a fine froth forms on top. This process is known as _milling_, and should always be applied whenever milk is used in the preparation of these beverages.

BREAKFAST COCOA
(Sufficient to Serve Six)

2 c. milk
2 Tb. cocoa
2 Tb. sugar
Few grains of salt
2 c. boiling water

Scald the milk. Mix the cocoa, sugar, and salt, form into a paste by stirring in a little of the boiling water, and then add the scalded milk and the remainder of the water. Beat with an egg beater until a froth is formed and serve at once.

70. RICH COCOA.--There are times when it is desired to serve rich cocoa, as, for instance, with a lunch that is not high in food value or with wafers at afternoon social affairs. The accompanying recipe explains how to make cocoa that will be suitable for such occasions.

RICH COCOA
(Sufficient to Serve Six)

4 c. milk
3 Tb. cocoa
1/4 c. sugar
Few grains of salt
1/2 c. boiling water

Scald the milk. Stir the cocoa, sugar, and salt into a smooth paste with the boiling water and boil for 2 or 3 minutes. Add the scalded milk, mill, and serve.

71. CREAMY COCOA.--When there is not very much milk on hand and still a rich, creamy cocoa is desired, the accompanying recipe should be tried. As will be noted, flour is used in addition to the usual ingredients. While this is accountable for the creamy consistency of the cocoa, it should be remembered that the cocoa must be cooked long enough to remove the raw, starchy flavor of the flour.

CREAMY COCOA
(Sufficient to Serve Six)

4 Tb. cocoa
1 Tb. flour

4 Tb. sugar
Few grains of salt
2 c. boiling water
2 c. milk

Mix the cocoa, flour, sugar, and salt, and stir into a paste with some of the water. Add the rest of the water, cook for 5 minutes, and then add the milk, which has been scalded. Mill and serve.

72. HOT CHOCOLATE.--Very good hot chocolate can be made by following the directions here given. As will be noted, this recipe is similar to several of those given for cocoa, except that chocolate is substituted for the cocoa. It may therefore be used on any occasion when cocoa would be served. It is especially delicious when served with a tablespoonful or two of whipped cream.

HOT CHOCOLATE

2 c. milk
1-1/2 sq. unsweetened chocolate
1/4 c. sugar
Few grains of salt
2 c. boiling water

Scald the milk. Melt the chocolate over the fire, add the sugar and salt, and gradually stir in the boiling water. Place over the fire, let boil for 2 or 3 minutes, and add the scalded milk. Mill and serve plain or with whipped cream.

73. ICED COCOA OR CHOCOLATE.--An excellent warm-weather beverage consists of cold cocoa or cold chocolate served either with or without sweetened whipped cream. Prepare the cocoa or chocolate according to any of the recipes already given and then allow it to cool. Fill glasses with cracked ice, pour the cocoa or chocolate over it, and serve either with or without sweetened whipped cream.

74. LEFT-OVER COCOA AND CHOCOLATE.--As the materials used in the preparation of cocoa and chocolate are rather expensive, not the slightest quantity of these beverages that remains after serving should be wasted. However, a small amount of chocolate usually has to be added so that it will have a stronger flavor. It may then be thickened with corn starch for chocolate blanc mange or with gelatine for chocolate jelly. Either of these served with whipped cream or a sauce of some kind makes an excellent dessert. Chocolate bread pudding may also be flavored with these left-over beverages.

It is also a good plan to utilize left-over cocoa or chocolate for flavoring purposes. However, additional cocoa or chocolate and sugar should first be added to it, and the mixture should then be boiled to a sirup. When so prepared it may be used whenever a chocolate flavoring is desired, such as for flavoring other beverages, cake icings, custards, sauces for desserts, and ice creams.

SERVING COCOA AND CHOCOLATE

75. When cocoa or chocolate is used to accompany meals, it is served in the usual sized teacup. However, when either of these beverages is served at receptions or instead of tea in the afternoon, regular chocolate cups, which hold only about half as much as teacups, are used. An attractive chocolate service to use for special occasions is shown in Fig. 11. The cocoa or chocolate is prepared in the kitchen, but is served to the guests from a chocolate pot, such as the one shown, in tall cups that match the chocolate pot in design. If such a service is not available, the cocoa or chocolate may be poured into the cups in the kitchen and then brought to the guests on a tray.

[Illustration: FIG. 11]

Besides sugar, which is generally added in the preparation of cocoa and chocolate, cream usually accompanies these beverages, especially when they are made without milk or with only a little. If the cream is whipped and slightly sweetened, a spoonful or two will be sufficient to render the beverage delightful. In case no cream is on hand, marshmallows make a very good substitute. One of these should be placed in the bottom of each cup and the hot beverage poured over it. The marshmallow softens and rises to the top. When marshmallows are to be added to cocoa, less sugar should be used in its preparation.

* * * * *

NON-STIMULATING BEVERAGES

CEREAL BEVERAGES

76. NON-STIMULATING BEVERAGES are those which contain neither stimulant nor alcohol. They are the ones usually depended on to carry nutrition into the body and to provide the necessary refreshment. In this class of beverages come the various cereal beverages, fruit drinks, soft drinks, and milk-and-egg drinks. With the exception of the cereal beverages, these drinks are of a very refreshing nature, for they are served as cold as possible and they contain materials that make them very pleasing to the taste. Most of them can be prepared in the home at much less cost than they can be purchased commercially prepared or at soda fountains; so it is well for the housewife to be familiar with their nature and their preparation.

77. CEREAL BEVERAGES, as the name implies, are made from cereals. Of these, the _cereal coffees_ are perhaps the most common. They contain nothing that is harmful, and are slightly beneficial in that they assist in giving the body some of the necessary liquid. However, they have absolutely no food value and are therefore of no importance in the diet except to take the place of stimulating beverages that are likely to injure those who drink them. They are made of cereals to which sugar or molasses is added, and the whole is then baked until the cereals brown and the sugar caramelizes, the combination producing a flavor much like

that of coffee. Plain roasted wheat or bran can be used very well as a substitute in the making of these beverages. In the parts of the country where rye is extensively grown, it is roasted in the oven until it is an even brown in color. It is then used almost exclusively by some persons to make _rye coffee_, a beverage that closely resembles coffee in flavor.

78. The _instantaneous cereal beverages_ are made by drawing all the flavor possible out of the material by means of water. The water is then evaporated and the hard substance that remains is ground until it is almost a powder. When water is added again, this substance becomes soluble instantly. _Instantaneous_ coffee is prepared in the same way. The way in which to use these beverages depends, of course, on the kind selected, but no difficulty will be experienced in their preparation, for explicit directions are always found in or on all packages containing them.

* * * * *

FRUIT BEVERAGES

INGREDIENTS FOR FRUIT BEVERAGES

79. FRUIT BEVERAGES are those which contain fruit and fruit juices for their foundation. As there are many kinds of fruit that can be used for this purpose, almost endless variety can be obtained in the making of these beverages. One of the important features is that a great deal of nourishment can be incorporated into them by the materials used. In addition, the acids of fruits are slightly antiseptic and are stimulating to the digestion as well as beneficial to the blood.

80. Lemon juice, when mixed with other fruit juices, seems to intensify the flavor. Because of this fact, practically all the recipes for fruit beverages include this juice as one of the ingredients. The combination of pineapple and lemon yields a greater quantity of flavor for beverages, ices, etc. than any other two fruit flavors. Juice may be extracted from all fruits easily. To obtain lemon juice for a fruit beverage, first soften the fruit by pressing it between the hand and a hard surface, such as a table top, or merely soften it with the hands. Then cut it in two, crosswise, and drill the juice out, as shown in Fig. 12, by placing each half over a drill made of glass or aluminum and turning it around and around until all the juice is extracted. To remove the seeds and pulp, strain the juice through a wire strainer. The juice from oranges and grapefruit, if they are not too large, may be extracted in the same way.

81. It is not always necessary to extract juices from fresh fruit for fruit beverages; in fact, juice from canned fruit or juice especially canned for beverage making is the kind most frequently employed. For instance, in the canning of fruit there is often a large quantity of juice left over that most persons use for jelly. It is a good plan to can this juice just as it is and then use it with lemon juice or other fruit juices for these beverages. Also, juices that remain after all the

fruit has been used from a can may be utilized in the same way, no matter what the kind or the quantity. In fact, unless otherwise stated in the recipes that follow, the fruit juices given, with the exception of orange and lemon juice, are those taken from canned fruit or juices canned especially for beverage making. These juices also lend themselves admirably to various other uses, for, as has already been learned, they are used in ices, gelatine desserts, salad dressing, pudding sauces, etc. Therefore, no fruit juice should ever be wasted.

[Illustration: FIG. 12]

82. The clear-fruit beverages become more attractive when they are garnished in some way. A slice of lemon, orange, or pineapple, or a fresh strawberry put into each glass improves the flavor and makes the beverage more appetizing. Red, yellow, and green cherries may be bought in bottles and used for such purposes. As these are usually preserved in wine and are artificially colored, many persons object to their use. A good substitute for them is candied cherries. These can be bought from any confectioner and do very well when a red decoration is desired.

PREPARATION OF FRUIT BEVERAGES

83. LEMONADE.--Next to water, no other drink is so refreshing nor quenches the thirst to so great an extent as lemonade. Lemonade is suitable for many occasions, and as lemons can be purchased at any time of the year it can be made at almost any season. The lemon sirup prepared for this beverage may be used as desired, for if it is put in a cool place it will keep for a long time. The more the sirup is boiled down, the better will it keep. A tablespoonful or two of glucose or corn sirup added to such mixtures when they are boiled will help to keep them from crystallizing when they stand.

LEMONADE
(Sufficient to Serve Six)

1 c. sugar
1 qt. water
1/2 c. lemon juice

Make a sirup by boiling the sugar and water for a few minutes, and set aside to cool. Add the lemon juice and then dilute with ice water to suit the taste. Serve in glasses and garnish each one with a slice of lemon or a red cherry.

84. ORANGEADE.--While not so acid in flavor as lemonade, orangeade is also a delightful drink. On warm days, drinks of this kind should take the place of the hot ones that are generally used during the cold weather.

ORANGEADE
(Sufficient to Serve Six)

3/4 c. sugar
1 qt. water
1/2 c. orange juice
3 Tb. lemon juice

Make a sirup of the sugar and 1 cupful of the water. Allow this to become cool and then add the fruit juices and the remaining water. Pour into glasses and garnish each glass with a slice of orange, a red cherry, or a fresh strawberry.

85. GRAPE LEMONADE.--An excellent combination in the way of a beverage is lemonade and grape juice. Besides adding flavor to the lemonade, the grape juice gives it a delightful color.

GRAPE LEMONADE
(Sufficient to Serve Six)

1 qt. lemonade
1 c. grape juice

Prepare the lemonade in the manner explained in Art. 83. Add the grape juice to the lemonade and stir well. Serve ice cold in glasses.

86. PINEAPPLE LEMONADE.--Another variation of lemonade is produced when pineapple juice is added to it. To garnish this beverage, a slice of lemon and a spoonful of grated pineapple are generally used. This pineapple beverage is delightful with wafers or small cakes as refreshments for informal social affairs during hot weather.

PINEAPPLE LEMONADE
(Sufficient to Serve Six)

1 c. water
3/4 c. sugar
3 c. ice water
1 c. juice from canned pineapple
3 lemons

Make a sirup of the water and sugar, and set aside to cool. Add the ice water, the pineapple juice, and the juice of the lemons. Stir well, strain, and serve. Garnish with a slice of lemon and a spoonful of grated pineapple added to each glass.

87. MINT JULEP.--Mint drinks are not served so often as some of the other fruit beverages, but those with whom they find favor will undoubtedly be delighted with mint julep prepared according to the following recipe:

MINT JULEP
(Sufficient to Serve Eight)

4 sprigs mint
1 c. sugar

1 qt. water
1 c. red cherry juice
1/2 c. pineapple juice
1/2 c. orange juice
1/4 c. lemon juice

Crush the mint with the sugar, using a potato masher or a large spoon. Add the water and fruit juices and strain. Serve over crushed ice and garnish the glasses with sprigs of mint. Tall, narrow glasses are especially attractive for serving this drink.

88. FRUIT NECTAR.--The term nectar was used by the early Greeks to mean the drink of the gods. Now it is often applied to an especially delightful beverage. Pineapple combined with lemon is always good, but when orange juice is also used, an excellent nectar is the result.

FRUIT NECTAR
(Sufficient to Serve Eight)

3/4 c. sugar
2 c. water
1-1/2 c. orange juice
1 c. pineapple juice
1/2 c. lemon juice

Boil the sugar and water for 2 minutes and then cool. Add the fruit juices, strain, and serve over cracked ice.

89. RED-RASPBERRY NECTAR.--A beverage that is pleasing to the eye, as well as delightful to the taste, can be made by combining red-raspberry juice and lemon juice with the required amount of sugar and water. The juice from canned raspberries may be used for this drink.

RED-RASPBERRY NECTAR
(Sufficient to Serve Six)

1/2 c. sugar
2 c. water
1/2 c. lemon juice
1-1/2 c. red raspberry juice

Boil the sugar and water for 2 minutes and allow the sirup to become cool. Then add the fruit juices, strain, and serve over cracked ice.

90. SPICE CUP.--Occasionally a spice drink seems to be just what is desired. When this is the case, the directions given in the accompanying recipe for spice cup should be followed.

SPICE CUP
(Sufficient to Serve Eight)

1-1/2 c. sugar
1-1/2 pt water

12 cloves
2-in. stick cinnamon
3 lemons
4 oranges
2 drops oil of wintergreen

Boil the sugar, water, and spices together for 5 minutes and allow the sirup to become cool. Add the juice of the lemons and oranges and the wintergreen oil and serve in glasses over cracked ice. Garnish each glass with slices of orange and lemon or a piece of preserved ginger.

91. FRUIT PUNCH.--As fruit beverages are very often served at small receptions, club meetings, or parties, a recipe that will make a sufficiently large quantity is often desired. The amounts mentioned in the following recipe will make enough fruit punch to serve thirty to forty persons if punch glasses are used, or sixteen to twenty if ordinary drinking glasses are used.

FRUIT PUNCH

2-1/2 c. sugar
1 qt. water
2 c. fruit juice (raspberry, strawberry, or cherry)
6 oranges
6 lemons
1 pt. can grated pineapple
1 c. strong black tea (strained)
1 qt. carbonated water

Boil the sugar and water for 2 minutes and allow the sirup to become cool. Then add the fruit juice, the juice of the oranges and lemons, the pineapple, and the tea. Just before serving, add the carbonated water, which lends a sparkling appearance and a snappy taste to a beverage of this kind. Pour over cracked ice into sherbet or punch glasses or into tall narrow ones.

92. GINGER-ALE PUNCH.--As most persons like the flavor of ginger ale, punch containing ginger ale is always a favorite when a large company of persons is to be served. The quantity that the accompanying recipe makes will serve twenty to twenty-five persons if punch glasses are used, or ten to twelve persons if drinking glasses are used.

GINGER-ALE PUNCH

1-1/2 c. sugar
1 pt. water
2 lemons
3 oranges
1 pt. grape juice
4 sprigs fresh mint (crushed)
1 lemon sliced thin
1 qt. ginger ale

Boil the sugar and water for 2 minutes and allow the sirup to become cool. Drill the juice from the lemons and oranges and add this with the grape juice, crushed mint, and sliced lemon to the sirup. Just before using, add the ginger ale and serve over cracked ice.

SOFT DRINKS

93. A class of very popular non-stimulating beverages are the SOFT DRINKS sold at the soda fountains. Many of them can also be bought in bottles and so may be purchased and served at home. These drinks really consist of carbonated water and a flavoring material that is either prepared chemically and colored or made of fruit extracts. Sometimes ice cream is added, and the drink is then called _ice-cream soda_.

94. Soft drinks include phosphates, ginger ale, coca cola, birch beer, root beer, and various other drinks called mashes, sours, and freezes. While these are pleasing to the taste and have the advantage of being ready to drink when prepared, it is advisable not to indulge in them too frequently, because excessive use of them is liable to affect the system. Besides, beverages that are just as satisfactory as these so far as flavor is concerned and that are made of much better material can be prepared at home at far less cost. With these drinks, as with other commercially prepared articles of food, the cost of preparation and service in addition to the cost of materials must be paid for by the consumer.

NOURISHING BEVERAGES

95. Many times it is necessary or desirable to administer food in the form of liquid. When this is to be done, as much nourishment as possible should generally be incorporated into the beverage. To meet such a need, the following recipes are presented. In each case, the quantities mentioned make a drink sufficient for only one person, so that if more than one are to be served the amounts should be multiplied by the number desired. The food materials used in these drinks are easily digested, and the beverages are comparatively high in food value.

96. At most soda fountains, these nourishing drinks are offered for sale, so that if one does not desire the work of preparation, they may be obtained at such places. However, as practically all the ingredients are materials used in the home and are therefore nearly always on hand in most households, drinks of this kind may be prepared at home at much less cost than when purchased already made. The main thing to remember in their preparation is that the ingredients should be as cold as possible and that the beverage should be cold when served.

97. The beverages containing eggs may be made in more than one way. They may be mixed in a bowl or an enamelware dish with a rounded bottom and then beaten with a rotary egg beater, or they may be mixed in a metal shaker designed especially for this purpose and then shaken thoroughly in that. In drinks of this kind, the point to remember is that the eggs

should be beaten or shaken until they are light and foamy.

98. CHOCOLATE SIRUP.--While chocolate sirup is not a beverage in itself, it is used to such an extent in beverages, as well as an accompaniment to numerous desserts, that it is well for the housewife to know how to prepare it. It may be kept an indefinite length of time if it is put into a glass jar and sealed. Here, as in the preparation of other sirups, a tablespoonful or two of corn sirup or glucose will help to keep the sirup from crystallizing.

CHOCOLATE SIRUP

4 sq. chocolate
1 c. water
3/4 c. sugar

Melt the chocolate in a saucepan, stir in the water, and add the sugar. Boil until a thick sirup is formed.

99. PLAIN MILK SHAKE.--A pleasant variation for milk is the plain milk shake here given. Even those who are not fond of milk and find it hard to take like it when it is prepared in this way.

PLAIN MILK SHAKE

1 c. milk
2 tsp. sugar
Few drops of vanilla
Dash of nutmeg

Beat all the ingredients together with an egg beater or shake well in a shaker and serve in a glass with cracked ice.

100. EGG MILK SHAKE.--The simplest form of egg drink is the egg milk shake explained in the accompanying recipe. This is an extremely nutritious drink and is often served to invalids and persons who must have liquid nourishment.

EGG MILK SHAKE

3/4 c. milk
1 egg
1 Tb. sugar
Pinch of salt
Few drops of vanilla

Mix all the ingredients and beat the mixture with a rotary beater or shake it in a shaker. Serve in a glass over cracked ice.

101. EGG CHOCOLATE.--The addition of chocolate to an egg milk shake improves it very much and makes a drink called egg chocolate.

EGG CHOCOLATE

3/4 c. milk
1 egg
2 Tb. chocolate sirup
Few drops of vanilla
Pinch of salt

Mix all the materials and beat with an egg beater or shake thoroughly in a shaker. Serve in a glass with cracked ice.

102. CHOCOLATE MALTED MILK.--A preparation that is much used in nourishing drinks and that furnishes a great deal of nutrition is malted milk. This is made from cow's milk and is blended by a scientific process with malted grains. It comes in powder form and may be purchased in bottles of various sizes. It is well to keep a good brand of malted milk on hand, as there are various uses to which it can be put.

CHOCOLATE MALTED MILK

3/4 c. milk
1 egg
2 Tb. malted milk
2 Tb. chocolate sirup
Few drops of vanilla
Pinch of salt

Mix and shake in a shaker or beat with a rotary egg beater. Serve in a glass with cracked ice.

103. ORANGE EGG NOG.--The accompanying recipe for egg nog requires orange for its flavoring, but any fruit juice may be substituted for the orange if desired. Pineapple and apricot juices are exceptionally good.

ORANGE EGG NOG

1/4 c. cream
1/4 c. milk
1 egg
1 Tb. sugar
2 oranges

Mix the cream, milk, egg, and sugar, beat well with an egg beater, and continue beating while adding the juice of the oranges. Serve in a glass over crushed ice.

104. FOAMY EGG NOG.--An egg nog can be made foamy and light by separating the eggs and beating the yolks and whites separately. Either cream or milk may be used for this drink, and it may be flavored with vanilla or fruit juice, as preferred. A small piece of red jelly beaten into the egg white makes this drink very attractive; or, jelly may be used as a flavoring and beaten with the ingredients.

FOAMY EGG NOG

2 eggs
1 Tb. sugar
1/2 c. cream or milk
2 Tb. fruit juice or 1/2 tsp. vanilla

Separate the yolks and whites of the eggs. Mix the yolks with the sugar, cream or milk, and the fruit juice or vanilla and beat thoroughly. Beat the whites stiff and fold into the first mixture, retaining a tablespoonful of the beaten white. Pour into a tall glass, put the remaining white on top, and serve.

* * * * *

BEVERAGES

EXAMINATION QUESTIONS

(1) What is a beverage?

(2) What does boiling do to: (_a_) hard water? (_b_) impure water?

(3) What is the value of beverages in the diet?

(4) Mention and define the three classes of beverages.

(5) (_a_) What are caffeine, theine, and theobromine? (_b_) Where is each found? (_c_) What effect do they have on the human body?

(6) (_a_) Where is tannic acid found? (_b_) What effect does it have on the human body?

(7) Tell briefly about the preparation of coffee for the market.

(8) How should coffee be bought?

(9) What are the general proportions of coffee and liquid used in the making of coffee?

(10) What use can be made of left-over coffee?

(11) Tell briefly about the preparation of black and green tea for the market.

(12) What points should be observed in the selection of tea?

(13) What general proportions of tea and water are used for the making of tea?

(14) Tell briefly about the preparation of cocoa and chocolate for the market.

(15) What advantage have cocoa and chocolate over tea and coffee as.

articles of food?

(16) What use can be made of left-over cocoa and chocolate?

(17) (_a_) How are cereal coffees made? (_b_) Of what value are they?

(18) Of what value are fruit beverages?

(19) What uses can be made of left-over fruit juices?

(20) What good use can be made of nourishing beverages?

* * * * *

THE PLANNING OF MEALS

* * * * *

NECESSITY FOR CAREFUL MEAL PLANNING

1. As every housewife realizes, the feeding of the members of her family places upon her serious and important responsibilities. While she deserves and receives credit for their good health, the blame for much of their ill health falls upon her, too. The reason for this is that illness is due in a greater measure to wrong food than to any other single factor; and even if improper diet is not directly responsible for ill health, it certainly lowers the bodily resistance and thus makes a person susceptible to disease.

The health of her family is naturally the housewife's first and greatest consideration, and as this depends so much on correct diet, it should be the aim of every housewife to plan her meals in the careful, intelligent way required to supply her household with the food each member needs.

2. As has already been learned, a knowledge of the selection, care, and preparation of food is absolutely necessary in providing proper diet. But correct feeding requires more than this. In addition, the housewife must have a working knowledge of what foods contain and their effect in the body. She must also learn what her family needs and then make every effort to supply this need in the most economical way. The result will be a sufficient amount of food of the right kind at a minimum expenditure of funds.

She should keep in mind, however, that the cost of diet has no direct relation to its food value, but that economy and proper feeding are closely connected. For instance, an inexpensive diet may be just as satisfactory from a food-value standpoint as an expensive one. But in order to make the inexpensive one adequate and the expensive one balanced, the housewife must apply her knowledge of the general composition of food; that is, she must know whether a food predominates in carbohydrate, fat, or protein, and whether or not it furnishes

minerals. Equipped with such knowledge, she will be able to purchase the largest amount of nutritive material for the smallest outlay of money. The cheapest food is not always the one that sells for the lowest price per pound, quart, or bushel, but the one that furnishes the most nutritive material at the lowest cost; also, food that is the wrong kind to serve is not an economical one to purchase.

3. Many housewives regard it as unnecessary to plan beforehand and persist in preparing meals without giving any previous thought to them. But to begin thinking about an hour before meal time what to have for a meal is neither wise nor economical, for then it is too late to determine what ought to be served from a diet standpoint and there can be prepared only those foods which the time will allow. As can well be understood, this is both a disastrous plan for correct diet and a very extravagant way in which to feed a family. Quickly broiled steaks and chops, commercially canned vegetables and fruits, and prepared desserts should be the occasional treat rather than the daily food. Instead of using these constantly, time should be allowed for the preparation of the less expensive meats and vegetables and the home-made desserts.

To prepare such foods successfully requires that meals should be planned at least 24 hours before they are to be served, and in reality the main dishes should be decided on 48 hours ahead of time. Then, sometime between breakfast and luncheon and before the day's marketing is done, detailed plans should be made for luncheon and dinner of that day and for breakfast of the next. Nor should the left-overs be disregarded if economy would be the watchword in the management of the household. Rather, they should be included in the plans for each day and used up as fast as possible.

* * * * *

PURCHASE OF FOODS

SUCCESSFUL MARKETING

4. The truly economical housewife will find it necessary each day to determine three things: (1) what is left from yesterday's meals and what use can be made of it; (2) what is in supply that can be used for that day; and (3) what must be added to these things to provide satisfactory meals for the family. Having determined these points, she should make a list of the articles that she must purchase when she does her marketing. A pad fastened to the kitchen wall and a pencil on a string attached to the pad are convenient for this purpose. At the same time, they serve as a reminder that when all of any article, such as coffee, sugar, baking powder, etc., has been used, a note should be made of this fact. To her list of supplies that have become exhausted since her preceding marketing day should be added the fresh fruits, vegetables, and other perishable foods needed for the next day or preferably for the next two days if they can be kept.

5. It is only with proper preparation that the housewife may expect her marketing trips to be successful. If she starts to market with merely

two or three items in mind and then tries to think of what she needs as she orders, not only does she waste the grocer's time, but her marketing trip will be a failure. After she arrives home, she will find that there are other things she should have purchased, and the grocer will be forced to make an extra delivery to bring them to her. This is more than she has a right to expect, for the grocer should not be obliged to pay for her lack of planning.

6. To purchase economically, it is advisable, when possible, to buy at a cash grocery and to pay cash for what is bought. When this is done, one is not helping to pay the grocer for accounts he is unable to collect. It is a fortunate grocer who is able to collect 80 per cent. of his bills from his patrons when he conducts his business on the credit plan. However, if it is desired to deal with a credit grocer, all bills should be paid at least once a month. No customer has a right to expect the grocer to wait longer than 30 days for his money.

In many of the cities and large towns, some credit grocers have adopted what is called the "cash-and-carry plan." All customers, whether they buy for cash or on credit, must pay the same price for groceries, but those who wish their goods delivered must pay additional for delivery and those who buy on credit must pay a certain percentage additional on each purchase for bookkeeping. It will readily be seen that such a plan gives the cash customers, especially if they carry their purchases, a decided advantage over credit customers. Also, the grocer is better able to sell his wares at a lower price than the credit grocer who makes free deliveries and no charge for bookkeeping.

KEEPING HOUSEHOLD ACCOUNTS

7. NECESSITY FOR KEEPING ACCOUNTS.--Practically every family is limited to a definite sum of money that may be spent for food. The first consideration, then, while it may not be the most important one, is that of making each dollar buy all that it possibly can in order that the income may meet all the demands upon it. Various conditions arise that affect the proportion of the income to be used for this purpose. For instance, two women whose husbands have equal incomes would, under the same conditions, have an equal amount of money to spend for food, but as a rule there is something to cause this amount to become unequal. One woman may have two children in her family while the other has none, a condition that means, of course, that the woman with the children will have less money to spend for food and with that money she must feed more persons. Her family must be, if possible, as well nourished as the other one. In order to accomplish this task, it will be necessary to supply all the required food material in a form that will cost less than the food purchased by the woman who has a smaller family to feed and clothe.

An excellent way in which to keep expenses down and consequently to live within one's income is to keep a simple record of household expenses. Such a record will enable every housewife to determine just what each item of household necessities costs and whether or not the proportion of cost to income is correct. To keep a record of expenditures will not

prove much of a task if it is done systematically, for a few minutes a day will be sufficient time in which to keep accounts up to date. However, if account keeping is attempted, it should not be neglected even for a day, for it will soon assume the proportions of a large task and will have a tendency to discourage the housewife with this part of her work.

8. EQUIPMENT FOR HOUSEHOLD ACCOUNT KEEPING.--For convenience in keeping household accounts, a small desk like the one shown in Fig. 1 should, if possible, be secured and placed in an unoccupied or convenient corner of the kitchen. Here can be kept cook books, recipes, suitable books or cards for account keeping, the marketing pad, a file for bills from the grocer and the butcher, labels for cans and jars, etc. Here may also be placed an extension telephone, which, by being so convenient, will save the housewife many steps. A white desk with a chair to match is the most attractive kind to select for kitchen use, but a dark one may be used if preferred. The desk illustrated was a simple wooden one that was enameled white after it was bought, but it is possible to buy white desks for this purpose. A small, plain table will, of course, answer very well if no desk is available and it is desired not to buy one.

[Illustration: FIG. 1]

9. METHODS OF HOUSEHOLD ACCOUNT KEEPING.--If the housewife runs a credit account with the grocer, she will learn that different grocers have different ways of recording her purchases.

In some cases, she is provided with a "store book," which she takes to the grocer each time she makes a purchase and in which he records the date and the items bought by her. Then at the end of a stated time, usually the end of the month, when a settlement is to be made, the amounts for the month are totaled and a new account is started. With such a plan, the housewife does not have to keep any record for herself. To be certain that the grocer’s account is accurate, she simply has to check the entries each time they are made in the book by the grocer.

In other cases, the grocer merely makes out a slip, or bill, for each purchase and at the end of the month presents his statement for the amount due. In such an event, provided the housewife does not wish to make entries into a suitable book, she may file the slips as she receives them in order that she may check the grocer’s monthly bill as to accuracy. A bill file like that shown in Fig. 2 is very convenient for the filing of bills. However, if she does not wish to save each slip she receives, she may adopt one of two methods of account keeping, depending on how much time she has to devote to this matter.

[Illustration: FIG. 2]

10. If she desires to be very systematic and has sufficient time, it will prove a good plan to record each purchase in a suitable book in the manner shown in Fig. 3. Books for this purpose can be purchased in any store where stationery is sold and are not expensive. In this method of recording, as a page becomes filled with items, the total is carried

forward to each new page until the bill is paid at the end of the month. Then, for the next month, a new account may be started. This same method may also be followed in keeping accounts for meats, milk, and such household expenses as rent, light, heat, and laundry. All these accounts, together with an account for clothing and one for miscellaneous expense, make up a complete expense account.

GROCERY ACCOUNT

With ___John Smith, 420 Fourth Avenue_____

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=====================================================
 10/15 | 1 pk. Apples.....|  $ .45
       | 1 doz. Eggs.....|    .55
       | 1 lb. Butter.....|    .53
       | 2 lb. Sweet Potatoes.....|    .15
       | 2 cans Duff's Molasses.....|    .54
       | 1 pt. Vinegar.....|    .10
 10/17 | 1 cake Yeast.....|    .04
       | 6 lb. Crisco.....|   1.98
       | 1 box Coconut.....|    .35
       | 1 can Pineapple.....|    .25
       | 1 lb. coffee.....|    .40
       | 2 qt. Carrots.....|    .10
 10/19 | 1 box Matches.....|    .10
       | 2 bars Laundry Soap.....|    .12
       | 1 head Lettuce.....|    .08
       | 1 can Corn.....|    .20
       | 1 bu. Potatoes.....|   2.00
       | 1 qt. Maple Sirup.....|    .65
       |                          |--------
       |              Forwarded.....|  $8.59
=====================================================
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FIG. 3

11. A somewhat simpler plan and one that requires less time is shown in Fig. 4. When the slips are received, they should be checked to see whether they are correct and then added to get the total. Only this total, together with the date, is placed in the book kept for the purpose, the slips then being discarded. Such a plan will prove very satisfactory for the various household expenses if care is used in checking the items of the slips and in adding them.

Regarding the settlement of her accounts, the housewife who buys on credit will find it a good plan to pay her bills by check. Then receipts will not have to be saved, for the returned check is usually all that is required to prove that a bill has been paid.

12. The housewife who buys for cash does not necessarily have to keep a detailed record of her purchases, for by simply filing her purchase slips in the manner shown in Fig. 2 she can determine at any time what her money has been used for. Still, in every well-regulated household,

it is advisable to keep a daily record of income and expenditure; that is, to put down every day how much is spent for food, laundry, cleaning, and, in fact, all expenditures, as well as how much cash is received. Indeed, if such an account is kept, the tendency of money to "slip away" will be checked and a saving of money is bound to result.

GROCERY ACCOUNT

With_____John Smith, 420 Fourth Avenue_____

10/2	Groceries	$ 2.10
10/3	Groceries	2.76
10/6	Groceries	.42
10/8	Groceries	4.12
10/10	Groceries	1.09
10/13	Groceries	.32
10/15	Groceries	2.30
10/17	Groceries	2.13
10/20	Groceries	1.93
10/22	Groceries	3.97
10/24	Groceries	1.69
10/27	Groceries	4.10
10/29	Groceries	1.12
10/31	Groceries	3.35
	Forwarded	$31.40

FIG. 4

13. A simple plan for keeping such a record is illustrated in Fig. 5. For this record it is possible to buy sheets of paper or cards already ruled at any stationery store, but it is a simple matter to rule sheets of blank paper that will answer the purpose very well. As will be observed, there is a space provided for every day of the month and columns into which may be placed the expenditures for groceries, including fruits and vegetables, as well as for meats and fish, milk, laundry and cleaning, and miscellaneous items, such as ice and other necessities that are not ordinarily classed as groceries. Of course, the number of columns to be used can be regulated by the person keeping the account, the illustration simply showing the general procedure. However, one column should be devoted to the daily expenditure, the figures here being the amounts of the total money spent for the different items each day. In the last column should be recorded the various amounts of money received by the housewife during the month for the settlement of her bills. At the end of the month, all of the columns should be totaled. The total of the daily outlay should equal that of the preceding columns. The difference between this total and that of the money received will show the housewife just how she stands with regard to income and expenditure for foods and kitchen supplies. In this case, there is an excess of expenditure amounting to $10.68, and this sum should be forwarded to the June account. On the other hand, should the housewife find that her expenses exceed her allowance, she will know that it will be necessary for her to curtail her expenditures in

some way.

Expenditures and Receipts for the Month of ___May___, 19___

Date	Groceries	Meats and Fish	Milk	Laundry and Cleaning	Miscellaneous Expenditures	Daily Outlay	Money Rec'vd
1	$ 2.10	$ .60	$ .28	$ 1.50		$ 4.48	$ 5.70
2		.40	.28			.58	
3	2.76	1.90	.28		$ .35	5.29	15.00
4			.28			.28	
5			.28			.28	
6	.42		.28		.35	1.05	
7		.36	.28		.10	.74	
8	4.12		.28	2.00	.40	6.80	
9			.28			.28	
10	1.09	1.83	.28		.38	3.60	15.00
11			.28			.28	
12			.28		.35	.63	
13	.32	.76	.28			1.36	
14			.28		.19	.47	
15	2.30		.28	1.50	.12	4.20	
16		.53	.28			.81	
17	2.13	1.63	.28		.60	4.64	15.00
18			.28			.28	
19			.28		.22	.50	
20	1.93		.28		.40	2.61	
21		.90	.28			1.18	
22	3.97		.28	2.00	.40	6.65	
23	2.10		.28			.28	
24	2.10	2.24	.28		.80	5.01	15.00
25			.28		.10	.38	
26			.28	1.50		1.78	
27	4.10		.28		.35	4.73	
28		.38	.28			.66	
29	1.12	.46	.28	1.50	.40	3.76	
30			.28			.28	
31	3.35	1.87	.28		.55	6.05	15.00
Total	$31.40	$13.88	$ 8.68	$10.00	$ 6.66	$70.02	$80.70

FIG. 5

Such a method of record keeping could also be followed with good results for showing the distribution of the entire income of a family. It would simply mean the planning of suitable columns for the different items of expenditure.

14. Too much cannot be said of the merit of following some such simple account-keeping method as the ones here outlined, for, as has been explained, it will enable the housewife to know with a fair degree of

accuracy what she has spent her money for. In addition to the satisfaction this will give, it will supply a basis from which she can apportion, or budget, her yearly income if she so desires. By giving careful consideration to the various items of expense, she may find it possible to reduce some of them in order to increase her savings account or to have money for other items that require a larger expenditure.

* * * * *

COST OF FOODS

FACTORS INFLUENCING COST

15. Certain factors that enter into the production of food add so much to the cost that they must be taken into consideration when food is purchased. The housewife who disregards these factors fails in the purchase of food, for she does not know so well what foods to buy nor how to buy them in a way to keep down the cost as the woman who is familiar with these matters. It is possible that the cost of a food may be out of all proportion to its value because of the profits that must necessarily be paid to each person through whose hands the food passes. In the first place, the overhead expenses of the food dealer must be paid by the housewife, who is regarded as the _consumer_. These expenses include his rent, light, and heat, his hired help, such as clerks, bookkeepers, delivery men, and the cost of delivery. In addition, the cost of transportation figures in prominently if the foods have to be shipped any distance, the manufacturer's profit must often be counted in, and the cost of advertising must not be overlooked. With all such matters, the housewife must acquaint herself if she would buy in the most economical way.

[Illustration: FIG. 6]

16. CHART OF FOOD PROBLEM.--To assist the housewife in her mastery of the purchasing side of the food problem, a chart, Fig. 6, is presented. This chart shows the various routes through which foods travel before they reach the housewife, or consumer. The lines used to connect all dealers from the producer to the consumer represent transportation or delivery, and the increase in cost due to overhead expense and profit is indicated by the black spaces, which increase in size as the number of dealers increase. The _producer_ may be the manufacturer, but in most cases he is the farmer, the stockman, the dairyman, or the fruit grower. The dealers handling the food between the producer and the consumer are known as _middlemen_. They include the wholesaler, the jobber, and the retailer. The retailer is the grocer, the butcher, or the green grocer.

17. So that this chart may be clearly understood, several concrete examples are given. Thus, the farmer who delivers vegetables directly to the consumer is an example of plan No. 1. He has very little overhead expense and consequently can sell cheaper than dealers who have a large overhead expense. However, when the farmer delivers his vegetables to the grocer and the grocer sells them to the consumer, an example of plan

No. 2 is afforded. Food bought in this way costs more than that bought directly from the farmer. In plan No. 3, the farmer, for instance, sells his vegetables to a wholesaler, who perhaps buys from other farmers and then sells small quantities of them to the grocer for sale to the consumer. This plan, as will readily be seen, is more involved than either No. 1 or No. 2, but a still more roundabout route is that of plan No. 4. In this case, for instance, the farmer sells his vegetables to a canning factory, where they are canned and then sold to the grocer, who sells them in this form to the consumer. Often two wholesalers, the second one being known as a jobber, are involved in the transaction, as in plan No. 5. In such an event, the farmer sells to the wholesaler, who sells to the jobber, who, in turn, sells to the grocer, from whom the consumer secures the goods. The most complicated route is that shown in plan No. 6. This illustrates the case of the farmer who sells his cereal products to a manufacturer, who makes them up into breakfast foods. He then sells them in large quantities to the wholesaler, who sells them in 50- or 100-case lots to the jobber. From the jobber they go to the grocer, who delivers them to the consumer.

From a study of this chart, it can be readily seen that the cost of food may be reduced if the middlemen can be eliminated. For instance, the housewife will be able to get fruits and vegetables cheaper if she buys them from a farmer instead of a grocer, for she will not be called on to pay any of the grocer's overhead expense or profit. Again, if she buys her staple groceries in a store that is able to eliminate the wholesaler or the jobber, she will get them at a lower price than if she deals where these agencies must receive their share of the profits.

18. NATIONALLY ADVERTISED GOODS.--Much is said about the fact that the consumer, in buying package foods that are nationally advertised, must pay for the package and the advertising. This statement is absolutely true; but it must be remembered that where large quantities of foods are handled, the materials can be bought by the manufacturer or the wholesaler at a lower price than by one who purchases only a small amount. Then, too, if great quantities are sold, and this condition is made possible only through advertising, the profit on each package sold can be much smaller than that which would have to be made when less is sold. Often, therefore, in spite of the advertising cost, a widely advertised food can be sold for less than one that is not advertised at all because a much greater quantity is sold.

19. CHAIN STORES.--The principle of selling great quantities of food at a comparatively small profit on each item is put into practice in chain stores, which are operated by different companies throughout the United States. Such stores are a boon to the housewife who must practice economy, for they eliminate a middleman by acting both as wholesaler and as retailer. Because of this fact, foods that are purchased in large quantities from the producer or manufacturer can be offered to the consumer at a lower price than in a retail store not a part of a chain. Therefore, if foods of the same quality are not lower in price in chain stores, it must be because the buying is not well done or a greater profit is made in selling them. In addition, chain stores generally require cash for all purchases made in them and they do not usually

deliver goods. Consequently, their overhead expense is materially reduced and they do not need to make such a large profit.

ECONOMICAL BUYING

20. APPORTIONMENT OF INCOME.--When the housewife thoroughly understands the qualities of foods as well as their comparative food values and is familiar with the factors that govern food prices, she is well equipped to do economical buying for her family. Then it remains for her to purchase the right kind of food and at the same time keep within her means. A good plan is to apportion the household expenses according to a _budget_; that is, to prepare a statement of the financial plans for the year. Then the amount of money that can be used for this part of the household expenses will be known and the housewife will be able to plan definitely on what she can buy. If necessary, this amount may be reduced through the housewife's giving careful attention to the details of buying, or if she is not obliged to lower her expenses, she may occasionally purchase more expensive foods, which might be considered luxuries, to give variety to the diet. The amount of money that may be spent for food depends, of course, on the income, and the greater the income, the lower will be the proportion of money required for this item of the household expense.

21. To throw some light on the proper proportion of the family income to spend for food, Table I is given. As the basis of this table, a family of five is taken and the proportion that may be spent for food has been worked out for incomes ranging from $600 to $2,400 a year. As will be noted, an income of $600 permits an expenditure of only 19 cents a day for each person. When food prices are high, it will be a difficult matter to feed one person for that amount, and still if the income is only $600 it will be necessary to do this. To increase the food cost over 39 cents a day per person, which is the amount allotted for an income of $2,400, would denote extravagance or at least would provide more luxury than is warranted.

TABLE I

PROPORTION OF FAMILY INCOME FOR FOOD

Income per Year	Per Cent. of Income Spent for Food	Amount Spent per year for Food	Amount Spent per Day for Five Persons	Amount Spent per Day per Person
$ 600	60	$360	$ .98	$ .19
800	55	500	1.36	.27
1,000	50	576	1.57	.31
1,200	48	576	1.57	.31
1,500	44	660	1.80	.36
1,800	39	702	1.92	.38
2,400	30	720	1.97	.39

Various conditions greatly affect this proportion. One of these is the rise and fall of the food cost. Theoretically, the buyer should adjust this difference in the food cost rather than increase her expenditures. For instance, if in a certain year, the general cost of food is 20 per cent. greater than it was in the preceding year, the housewife should adjust her plan of buying so that for the same amount of money spent in the previous year she will be able to supply her family with what they need. Of course, if there is an increase in the income, it will not be so necessary to work out such an adjustment.

22. ECONOMIES IN PURCHASING FOOD.--Through her study of the preceding lessons, the student has had an opportunity to learn how to care for food in order to avoid loss and waste, how to prepare it so that it may be easily digested and assimilated, and how to make it appetizing and attractive so that as little as possible is left over and none is wasted. She should therefore be thoroughly acquainted with the methods of procedure in regard to all such matters and should have worked out to her satisfaction the best ways of accomplishing these things to suit her individual needs. But, in addition to these matters, she must give strict attention to her food purchases if she would secure for her family the most wholesome and nourishing foods for the least expenditure of money.

23. To purchase food that will provide the necessary food value for a small outlay is possible to a certain extent, but it cannot be done without the required knowledge. In the first place, it means that fewer luxuries can be indulged in and that the family dietary will have to be reduced to necessities. It may also mean that there will probably be a difference in the quality of the food purchased. For instance, it may be necessary to practice such economies as buying broken rice at a few cents a pound less than whole rice or purchasing smaller prunes with a greater number to the pound at a lower price than the larger, more desirable ones. The housewife need not hesitate in the least to adopt such economies as these, for they are undoubtedly the easiest ways in which to reduce the food expenses without causing detriment to any one.

24. Further economy can be practiced if a little extra attention is given in the purchase of certain foods. As is well known, the packages and cans containing food are labeled with the contents and the weight of the contents. These should be carefully observed, as should also the number of servings that may be obtained from the package or can. For instance, the housewife should know the weight per package of the various kinds of prepared cereals she uses and the number of servings she is able to procure from each package.

Let it be assumed that she buys two packages of different cereals at the same time, which, for convenience, may be called package No. 1 and package No. 2. She finds that No. 1 contains 16 ounces and No. 2, only 12 ounces; so she knows that No. 1 furnishes the greater amount of food by weight for the money spent. But, on the other hand, No. 2 may go farther; that is, it may serve a greater number of persons. This, in all

probability, means that the cereals are similar in character, but that the food value of the servings from No. 2 is greater than that of the servings from No. 1. No. 2 is therefore the more economical of the two. Matters of this kind must not be overlooked, especially in the feeding of children.

Then, too, the housewife should work out carefully which she can use to greater advantage, prepared or unprepared cereals. If she finds that unprepared cereals are the more economical and if she can depend on their food value as being as high as that of the prepared ones, she should by all means give them the preference. Of course, she may use prepared cereals for convenience or for varying the diet, but the more economical ones should be used with greater regularity.

25. Canned goods should be carefully observed. A certain brand of tomatoes, for instance, may have 16 ounces to the can, whereas another brand that can be bought for the same price may have 24 ounces. There may be, however, and there probably is, a great difference in the quality of the tomatoes. The 24-ounce can may have a much greater proportion of water than the 16-ounce can, and for this reason will not serve to the same advantage. As it is with canned tomatoes, so is it with canned corn, peas, and other canned vegetables, for the price depends altogether on the quality. Therefore, several brands should be compared and the one should be purchased which seems to furnish the most food or the best quality of food for the least money, provided the quality continues.

26. In the preparation of meat, there is always some waste, and as waste is a factor that has much to do with the increasing of costs, it should be taken into consideration each time a piece of meat is purchased. If there is time for some experimenting, it makes an interesting study to weigh the meat before and after preparation, for then the amount of shrinkage in cookery, as well as the waste in bone, skin, and other inedible material, can be determined.

An actual experiment made with a 4-pound chicken showed that there was a loss of 2-3/4 pounds; that is, the weight of the edible meat after deducting the waste was only 1-1/4 pounds. The following shows how this weight was determined:

	POUNDS
Weight of chicken, including head, feet, and entrails	4
Weight of head, feet, and entrails	1-1/4
Weight of bones after cooking	7/8
Weight of skin after cooking	1/4
Shrinkage in cooking	3/8
Total amount of waste	2-3/4
Actual weight of edible meat	1-1/4

It will readily be seen that chicken at 40 cents a pound would make the cost per pound of edible meat amount to exactly $1.28, a rather

startling result. It is true, of course, that the busy housewife with a family can hardly spare the time for the extra labor such experiments require; still the greater the number of persons to be fed, the more essential is the need for economy and the greater are the possibilities for waste and loss.

27. The home production of foods does not belong strictly to economical buying, still it is a matter that offers so many advantages to the economical housewife that she cannot afford to overlook it. A small garden carefully prepared and well cultivated will often produce the summer's supply of fresh vegetables, with sufficient overproduction to permit much to be canned for winter. Not only do foods produced in a home garden keep down the cost of both summer and winter foods, but they add considerably to the variety of menus.

* * * * *

CORRECT DIET

SUITABILITY OF FOOD

28. At the same time the housewife is making a study of economy and trying to procure as nearly as possible the best quality and the largest quantity of food for the amount of money she has to spend, she must consider the suitability of this food for the persons to whom it is to be served. This matter is undoubtedly of greater importance than economy, for, regardless of the amount of money that is to be spent, suitable foods for the nourishment of all the members of the family must be supplied to them. For instance, a family of two may have $10 a week to spend for food, whereas one of five may perhaps have no more; but the larger family must have nourishing food just as the one of two must have. Therefore, whether the housewife has much or little to spend, her money must purchase food suited to the needs of her family. Unless she is able to accomplish this, she fails in the most important part of her work as a housewife, and as a result, the members of her family are not properly nourished.

29. It has long been an established fact that correct diet is the greatest factor in maintaining bodily health. Food is responsible for the growth and maintenance of the body tissues, as well as for their repair. In addition, it supplies the body with heat and energy. Consequently, taking the right food into the body assists in keeping a person in a healthy condition and makes work and exercise possible.

Because so much depends on the diet, the housewife, while considering what can be bought with the money she has to spend, must also decide whether the foods she plans to buy are suitable for the needs of her family. In fact, she should be so certain of this matter that she will automatically plan her menus in such a way that they will contain all that is necessary for each person to be fed. But, as every housewife knows, the appetites of her family must also be taken into consideration. Theoretically, she should feed her family what the

various members need, regardless of their likes and dislikes. However, very few persons are willing to be fed in this way; in truth, it would be quite useless to serve a dish for which no one in the family cared and in addition it would be one of the sources of waste.

30. To make the work of the housewife less difficult, children should be taught as far as possible to eat all kinds of food. Too often this matter is disregarded, and too often, also, are the kinds of food presented, to a family regulated by the likes and dislikes of the person preparing the food. Because she is not fond of certain foods, she never prepares them; consequently, the children do not learn to like them. On the other hand, many children develop a habit of complaining about foods that are served and often refuse to eat what is set before them. Such a state of affairs should not be permitted. Indeed, every effort should be made to prevent a spirit of complaint. If the housewife is certain that she is providing the members of her family with the best that she can purchase with the money she has to spend and that she is giving them what they need, complaining on their part should be discouraged.

31. With a little effort, children can be taught to like a large variety of foods, especially if these foods are given to them while they are still young. It is a decided advantage for every one to form a liking for a large number of foods. The person who can say that he cares for everything in the way of food is indeed fortunate, for he has a great variety from which to choose and is not so likely to have served to him a meal in which there are one or more dishes that he cannot eat because of a distaste for them.

Every mother should therefore train her children during their childhood to care for all the cereals, vegetables, and fruits. Besides affording the children a well-balanced diet, these foods, particularly vegetables and fruits, when served in their season, offer the housewife a means of planning economical menus, for, as every one knows, their price is then much lower than at any other time and is less than that of most other foods. During the winter, turnips, carrots, onions, and other winter vegetables are more economical foods than summer vegetables that must be canned or otherwise prepared to preserve them for winter use or the fresh summer vegetables purchased out of season. However, it is advisable to vary the diet occasionally with such foods.

COMPOSITION OF FOOD

32. To feed her family properly, the housewife should understand that the daily food must include the five food substances--protein, fat, carbohydrate, mineral matter, and water. As these are discussed in _Essentials of Cookery_, Part 1, they should be clear to the housewife, but if they are not fully understood, a careful review should be made of the discussions given there. The ways in which these food principles contribute to the growth and health of the body, as well as the ordinary foods that supply them in the greatest number, are tabulated in Table II for easy reference. This information will assist the housewife materially in the selection and preparation of food for her family;

consequently, close attention should be given to it and constant application made of it.

33. As has already been learned and as will be noted here, a food substance often has more than one use in the body. For instance, protein builds tissue and also yields energy, but its chief work is that of building tissue, and so it is classed first as a tissue-building food substance. The fats and carbohydrates also have a double use in the body, that of producing heat and energy and of building fatty tissue. However, as their chief use is to produce heat and energy, they are known principally as heat-producing foods. Mineral matter not only is necessary for the building of bone and muscle, but also enters into the composition of the blood and all the fluids in the body. Growth and development are not ideal without an adequate supply of the many kinds of these salts, which go to make up the tissues, nerves, blood, and other fluids in the body.

34. The body regulators must be included in the food given, for they assist in all processes carried on in the body. Some are necessary to aid in the stimulation required to carry on the processes of digestion and in some cases make up a part of the digestive fluids. Consequently, vegetables and fruits that supply these body regulators and foods that supply vitamines should be provided.

Water, the chief body regulator, not only is essential to life itself, but forms by far a greater proportion of the body than any other single substance. The largest part of the water required in the body is supplied as a beverage and the remainder is taken in with the foods that are eaten.

TABLE II

FOOD SUBSTANCES AND THEIR RELATION TO GROWTH AND HEALTH

I Body-building materials
  Proteins.
    Meat
    Fish and shell fish
    Poultry and game
    Eggs
    Milk and milk products
    Legumes (dried beans, peas, lentils)
    Wheat and wheat products, as corn starch
    Nuts
  Mineral matter, or ash
    Vegetables
    Fruits
    Eggs
    Milk
    Cereals
    Meats
II Heat-producing materials
  Fats

- Animal
  - Lard
  - Suet
  - Tallow
  - Butter and cream
- Vegetable
  - Olive oil
  - Corn oil
  - Cottonseed oil
  - Coconut oil
  - Nut oils
- Mixed oils
  - Oleomargarine
  - Butterine
  - Nut butter
  - Crisco, etc.

Carbohydrates

- Starch
  - Cereals and cereal products
  - Irish and sweet potatoes
- Sugar
  - Cane sugar and molasses
  - Beet sugar
  - Maple sugar and sirup
  - Honey
  - Corn sirup and other manufactured sirups

Proteins

- Same as in I

III Body regulators

Water

Mineral matter, or ash

- Same as in I

Cellulose

- Fruits
- Vegetables
- Covering of cereals and nuts

Food Acids

- Sour fruits--citric and malic
- Tomatoes--malic
- Spinach--oxalic
- Rhubarb--oxalic

Vitamines

- Fat soluble A
  - Milk
  - Butter
  - Egg yolk
- Water soluble B
  - Green vegetables, as spinach, chard, lettuce, beet greens
  - Asparagus and stem vegetables, as celery
  - Fruit vegetables, as tomatoes, peppers, okra
  - Fruits

The importance of bulk in foods cannot be emphasized too much. The indigestible cellulose of fruits, vegetables, and cereals is of such importance in the body that some of these foods should be supplied with every meal. Therefore, their incorporation into the diet should be considered as a definite part of the menu-making plan.

The acids of fruits are valuable as stimulants both to the appetite and to the digestion. Then, too, they give a touch of variety to a menu otherwise composed of rather bland foods. The stimulation they produce is much more healthful than that of condiments, drugs, or alcoholic beverages and should receive the preference.

Vitamines are substances necessary for both growth and health. A child deprived of the foods containing them is usually not well and does not grow nor develop normally. These substances are also required in the diet of adults in order to maintain the body in a healthy condition. The leafy vegetables and milk are the foods that yield the greatest supply of vitamines. In fact, it is claimed by those who have experimented most with this matter that these two sources will supply the required amount of vitamines under all conditions.

* * * * *

BALANCING THE DIET

QUANTITY AND PROPORTION OF FOODS

35. FACTORS INFLUENCING FOOD.--Numerous factors affect the kind and quantity of food necessary for an individual. Chief among these are age, size, sex, climate, and work or exercise. In addition to determining the amount of food that must be taken into the body, these factors regulate largely the suitability of the foods to be eaten. It is true, of course, that all the food substances mentioned in Table II must be included in every person's diet after the first few years of his life, but the quantity and the proportion of the various substances given vary with the age, sex, size, and work or exercise of the person and the climate in which he lives. Merely to provide dishes that supply sufficient food value is not enough. This food material must be given in forms that can be properly digested and assimilated and it must be in the right proportion for the person's needs. The aim should therefore be to provide a _balanced diet_, by which is meant one that includes the correct proportion of the various food substances to supply the needs of the individual.

36. QUANTITY OF FOOD IN CALORIES.--Without doubt, the most intelligent way in which to feed people is to compute the number of calories required daily. As will be remembered, the calorie is the unit employed to measure the amount of work that the food does in the body, either as a tissue builder or a producer of energy. The composition and food value of practically all foods are fairly well known, and with this information it is a simple matter to tell fairly accurately the amount of food that each person requires.

As has been stated, the number of calories per day required by a person varies with the age, size, sex, and occupation of the person, as well as with the climate in which he lives. For the adult, this will vary from 1,800 to 3,000, except in cases of extremely hard labor, when it may be necessary to have as high as 4,500 calories. The average number of calories for the adult, without taking into consideration the particular conditions under which he lives or works, is about 2,500. Still a small woman who is inactive might be sufficiently fed by taking 1,800 calories a day, whereas a large man doing heavy, muscular work might require 3,500 to 4,000 daily.

37. IMPORTANCE OF PROPER AMOUNT OF FOOD.--Most authorities agree that it is advisable for adults and children well past the age of infancy to take all the food required in three meals. The taking of two meals a day is sometimes advocated, but the possibility of securing in two meals the same quantity of food that would ordinarily be taken in three is rather doubtful, since it is assumed that large amounts of food are not so easily disposed of as are smaller ones.

On the other hand, to overeat is always a disadvantage in more respects than one. Taking food that is not required not only is an extravagance in the matter of food, but overtaxes the digestive organs. In addition, it supplies the body with material that must be disposed of, so that extra work on the part of certain organs is required for this activity. Finally, overeating results in the development of excessive fatty tissue, which not only makes the body ponderous and inactive, but also deadens the quickness of the mind and often predisposes a person to disease or, in extreme cases, is the actual cause of illness.

38. EFFECT OF WEIGHT ON DIET.--An idea of the way in which the weight of a person affects the amount of food required can be obtained by a study of Tables III and IV. As will be observed, Table III gives the number of calories per pound of body weight required each day by adults engaged in the various normal activities that might be carried on within 24 hours. It deals only with activity, the various factors that might alter the amounts given being taken up later. The figures given are for adults and the factors mentioned are those which affect the intake of food to the greatest extent.

The lowest food requirement during the entire 24 hours is during the time of sleep, when there is no activity and food is required for only the bodily functions that go on during sleep. Sitting requires more food than sleeping, standing, a still greater amount, and walking, still more, because of the increase in energy needed for these activities.

In a rough way, the various occupations for both men and women are classified under three different heads: Light Work, Moderate Work, and Heavy Work. It is necessary that these be understood in examining this table.

TABLE III

CALORIES PER POUND FOR 24 HOURS FOR ADULTS

Occupation	Calories
Sleeping	12
Sitting	14
Standing	17
Walking	20
Light work	22
Moderate work	24
Heavy work	27

Those considered as doing light work are persons who sit or stand at their employment without any great degree of activity. They include stenographers, dressmakers, milliners, teachers, clerks, shoemakers, tailors, machine operators, elevator operators, and conductors.

Moderate work involves a little more activity than light work, but not so much as heavy work. Professional cooks, professional housekeepers, housekeepers in their own homes, professional chambermaids, waitresses, masons, drivers, chauffeurs, plumbers, electricians, and machinists come under this class.

Persons doing heavy work are the most active of all. They include farmers, laundresses, excavators, lumbermen, miners, metal workers, and soldiers on forced march.

39. To show the variation in the amount of food required according to body weight, Table IV is given. The scale here presented has been worked out for two persons who are normal and whose weight is correct, but different, one weighing 130 pounds and the other 180 pounds. It is assumed, however, that they are occupied in 24 hours with activities that are identical, each one sleeping 8 hours, working at moderate labor for 8 hours, walking 2 hours, standing 2 hours, and sitting 4 hours.

TABLE IV

DIFFERENCE IN FOOD REQUIREMENTS THROUGH VARIATION IN WEIGHT

Number of Calories for 130 Pounds	
8 hours, sleeping	520
4 hours, sitting	303
2 hours, standing	184
2 hours, walking	216
8 hours, moderate work	1,040
--	-----
24	2,263

Number of Calories for 180 Pounds	
8 hours, sleeping	720
4 hours, sitting	430
2 hours, walking	300
2 hours, standing	238
8 hours, moderate work	1,440
--	-----

24 3,128

To find the total number of calories required for these activities, the weight, in pounds, is multiplied by the calories per pound for 24 hours for a certain activity. Thus, as in Table IV, if a person weighing 130 pounds sleeps for 24 hours, the number of pounds of weight, or 130, would be multiplied by 12, which is the number of calories required per pound in 24 hours for sleeping. However, since only 8 hours is occupied by sleep and 8 is 1/3 of 24, the required number of calories would be only 1/3 of this number. In this way each item is worked out in the table, as is clearly shown by the following figures:

For sleeping ..... 130 X 12 X 1/3 = 520
For sitting ..... 130 X 14 X 1/6 = 303
For standing ..... 130 X 17 X 1/12 = 184
For walking ..... 130 X 20 X 1/12 = 216
For moderate work ..... 130 X 24 X 1/3 = 1,040
Total, as in Table IV 2,263

40. In this connection, it may be interesting to know the ideal weight for persons of a given height. Table V shows the various heights for both men and women, in inches, and then gives, in pounds, the correct weight for each height. When, from this table, a person determines how far he is above or below the ideal weight, he can tell whether he should increase or decrease the number of calories he takes a day. For persons who are under weight, the calories should be increased over the number given in Table III for the normal individual if the ideal weight would be attained. On the other hand, persons who are overweight should decrease the number of calories until there is sufficient loss of weight to reach the ideal. Of course, an adjustment of this kind should be gradual, unless the case is so extreme as to require stringent measures. In most cases, a slight decrease or increase in the quantity of food taken each day will bring about the desired increase or decrease in weight.

TABLE V

CORRECT WEIGHT FOR CERTAIN HEIGHTS

Men		Women	
Height Inches	Weight Pounds	Height Inches	Weight Pounds
61	131	59	119
62	133	60	122
63	136	61	124
64	140	62	127
65	143	63	131
66	147	64	134
67	152	65	139

68	157	66	143
69	162	67	147
70	167	68	151
71	173	69	155
72	179	70	159
73	185		
74	192		
75	200		

41. EFFECT OF SEX ON DIET.--The difference in sex does not affect the diet to any great extent. Authorities claim that persons of opposite sex but of the same weight and engaged in the same work require equal quantities of food. But, in most cases, the work of women is lighter than that of men, and even when this is not the case women seem to require less food, probably because of a difference in temperament. That taken by women is usually computed to be about four-fifths of the amount necessary for a man. The proportion of food substances does not differ, however, and when individual peculiarities are taken into consideration, no definite rules can be made concerning it.

In the case of boys and girls up to the age of young manhood and womanhood, the same amount of food is required, except for the difference in activity, boys usually being more active than girls.

42. EFFECT OF CLIMATE ON DIET.--The climate in which a person lives has much to do with the kind of diet he requires. In the extreme North, the lack of vegetation makes it necessary for the inhabitants to live almost entirely upon animal food except during the very short warm season. Consequently, their diet consists largely of protein and fat. Under some circumstances, a diet of this kind would be very unfavorable, but it seems to be correct for the people who live in these regions, for generations of them have accustomed themselves to it and they have suffered no hardship by doing so. It is true, however, that races of people who do not live on a well-balanced diet are not physically such fine specimens as the majority of persons found in countries where it is possible to obtain a diet that includes a sufficient supply of all the food substances.

43. In hot countries, the diet consists much more largely of vegetables than any other class of foods. This means that it is very high in carbohydrate and comparatively low in protein and fat. As can well be understood, a diet of this kind is much more ideal for a warm climate than a diet composed to a great extent of animal foods.

44. In temperate zones, the diet for both summer and winter seasons varies according to the appetite of the inhabitants themselves. Usually a light diet consisting of fruits, vegetables, cereals, and a small amount of meat is found the most desirable for summer weather, while a similar one with a larger proportion of meat is the usual winter diet. On the whole, the desire for food, which, to a certain extent, is regulated by the climate, can be trusted to vary the diet fairly well for the existing conditions.

45. EFFECT OF AGE ON DIET.--The proper diet for infancy and childhood is a matter that must be discussed by itself, for it has practically no connection with other diet. It is also well understood that up to maturity there is a difference in the diet because of a difference in the needs of the body. However, from maturity up to 60 years of age, the diet is altered by the conditions already mentioned, namely weight, size, sex, climate, and work or exercise. At the age of 60, the amount of food required begins to decrease, for as a person grows older, the body and all of its organs become less active. Then, too, there is a reduced amount of physical exercise, which correspondingly reduces the necessity for food. At this time, an oversupply of food merely serves to overwork the organs, which being scarcely able to handle the normal quantity of food certainly keep in better condition if the amount of work they are called upon to do is decreased rather than increased.

It has been estimated that persons 60 years of age require 10 per cent. less food than they formerly did; those 70 years old, 20 per cent. less; and those 80 years old, 30 per cent. less. Usually the appetite regulates this decrease in food, for the less active a person is, the less likely is the appetite to be stimulated. However, the fact that there is also a great difference in persons must not be lost sight of. Some men and women at 70 years of age are as young and just as active as others at 50 years. For such persons, the decrease in quantity of food should not begin so soon, nor should it be so great as that given for the more usual cases.

46. As there is a decrease in quantity with advancing years, so should there be a difference in the quality of the food taken. That which is easily digested and assimilated is preferable to food that is rich or highly concentrated. Usually, it is necessary to increase the laxative food in the diet at this time of life, but this matter is one of the abnormalities of diet and therefore belongs properly to medical dietetics rather than to a lesson on normal diet.

DIET FOR INFANTS AND CHILDREN

47. From birth until a child has attained full growth, the food requirement is high in proportion to the size of the child. This is due to the fact that energy must be supplied for a great deal of activity, and at the same time new tissue must be manufactured from the food taken. It should be remembered, too, that all body processes during growth are extremely rapid. At birth, the average child weighs about 7 pounds, and for several days after birth there is a normal loss of weight. In a few days, however, if the diet is correct, the child begins to increase in weight and should gain about 1/2 pound a week until it is 3 months old. From this time on, its weekly gain should be slightly less, but it should be constant. If the weight remains the same or there is a decrease for a number of consecutive days or weeks, it is certain that the diet is incorrect, that the quantity of food is insufficient, or that the child is ill. The reason for the loss should be determined at once and the trouble then corrected.

Normal diet for the infant is the mother's milk, but if this cannot be supplied, the next best diet is modified cow's milk, which for the young child must be greatly diluted. If it is found necessary to give proprietary, or manufactured, foods, raw food of some kind should be used in addition, the best way to supply this being with a little orange juice or other fruit juice. At the age of 3 months, this may be given in small quantity if it is diluted, and then the amount may be gradually increased as the child grows older.

48. EFFECT OF WEIGHT ON CHILDREN'S DIET.--The food requirement in the case of children is determined by weight. To decide on the proper amount, it is necessary to know the normal weight at certain ages. At birth, as has been stated, the normal weight is 7 pounds; at 6 months, 15 pounds; at 1 year, 21 pounds; at 2 years, 30 pounds. The food requirement for 24 hours per pound of weight is as follows:

	CALORIES 24 HOURS
Children up to 1 year	45
Children from 1 to 2 years	40
Children from 2 to 5 years	36

From a study of these figures, it will be noted that there is a gradual decrease in the required number of calories per pound as the child grows older. The decrease continues until maturity is reached, and then the scale for adults applies.

49. EFFECT OF AGE ON CHILDREN'S DIET.--A child should not be kept exclusively on milk for more than 6 or 8 months, and then only in case it is fed on the mother's milk. Fruit juice, which has already been mentioned as an additional food, is recommended if the diet requires raw food or if it is necessary to make the child's food more laxative. When the child reaches the age of 6 months, it should be taught to take foods from a spoon or a cup; then when it must be weaned, the task of weaning will be much easier. At the age of 8 or 9 months, depending on the condition of the child, small amounts of well-cooked, strained cereals may be added to the diet, and these may gradually be decreased as the food is increased in variety. Up to 1-1/2 years of age, a child should have 8 ounces of milk three times a day, which amounts to 1-1/2 pints. At this age, half of a soft-cooked egg or a spoonful or two of tender meat chopped very fine, may be given, and for each such addition 4 ounces of milk should be taken out of the day's feeding. But from 1-1/2 years up to 5 years, at least 1 pint of milk a day should be included in the diet.

At a little past 1 year of age, a normal child may begin taking a few well-cooked vegetables, such as a bit of baked potato, a spoonful of spinach, carrot, celery, green peas, or other vegetables that have been forced through a sieve or chopped very fine. At 1-1/2 years, the normal child should be taking each day one vegetable, a cereal, buttered bread or toast softened with milk, eggs, fruit juice, a little jelly, and plain custards. However, each of these foods should be added to the diet

with caution and in small amounts, and if it appears to disagree with the child in any way, it should be discontinued until such time as it can be tolerated.

In case a child is being raised on a formula of cow's milk and it is a strong, normal child, it should be taking whole milk at the age of 8 or 10 months. If the child is not strong, the milk may still be diluted with a small amount of sterile water, but this should be gradually decreased until the child is able to tolerate whole milk.

50. FEEDING SCALE FOR INFANTS.--It is, of course, a difficult matter to make definite rules for the feeding of all children, for conditions arise with many children that call for special plans. However, for children that are normal, a feeding scale may be followed quite closely, and so the one given in Table VI is suggested.

TABLE VI

FEEDING SCALE FOR INFANTS

First Three Months

Milk.

Fourth Month

Same as for preceding months and orange juice and cereal waters.

Sixth Month

Same as for preceding months and well-cooked and strained cereal.

Eighth Month

Same as for preceding months and beef juice, beef broth, and yolk of soft-cooked egg.

Tenth Month

Same as for preceding months and unstrained cereal, half of soft-cooked egg, both white and yolk, chopped or strained cooked vegetables, such as spinach and other greens, asparagus, carrots, celery, and squash, stale bread, crackers, toast and butter.

Eleventh Month

Same as for preceding months and well-cooked rice, baked potato, jelly, plain custard, corn-starch custard, and junket.

Twelfth Month

Same as for preceding months and whole egg, a tablespoonful of tender meat, string beans, peas, turnips, onions, chopped or

strained applesauce, stewed prunes, and other fruits.

Eighteenth Month

Same as for preceding months and home-made ice cream, plain sponge cake, milk soups, and cereal puddings.

This scale is to be used by adding to the diet for one month the foods suggested for the next month, giving them at the time the child reaches the age for which they are mentioned. For instance, a child of 8 months may have everything included in the first three, four, and six months and, in addition, beef juice, beef broth, and the yolk of a soft-cooked egg, which is the diet suggested for the eighth month. Then at the tenth month it may have all of these things together with those given for this month.

51. When any of these foods is first added to the diet, much care is necessary. Each new food should be given cautiously, a teaspoonful or two at a time being sufficient at first, and its effect should be carefully observed before more is given. If it is found to disagree, it should not be repeated. If at any time a child is subject to an attack of indigestion, its diet should be reduced to simple foods and when it has recovered, new foods should be added slowly again. In the case of any of the ordinary illnesses to which children are subject, such as colds, etc., the diet should be restricted to very simple food, and preferably to liquids, until the illness has passed. The diet of a baby still being fed on milk should be reduced to barley water or a very little skim milk diluted with a large amount of sterile water. When the illness is over, the child may be gradually brought back to its normal diet.

DIET FOR THE FAMILY

52. One of the difficulties of every housewife having a family composed of persons of widely different tastes and ages is the preparation of meals that will contain sufficient food of the correct kind for all of them. Children up to 6 years of age usually require something especially prepared for their meals, except breakfast, but, as a rule, the selection of the diet for children from 6 years up to 15 or 16 years of age is merely a matter of taking from the meal prepared for the remainder of the family the right amount of the various foods. Tea and coffee should not be included in the diet of growing children, and should under no circumstances be given to small children. If the proper method is followed in this matter, no difficulty will result, but where children expect to eat the food served to the others at the table and are not content with what is given to them, it is better not to feed them at the same table with the adults.

53. The most satisfactory way in which to arrange meals that are to be served to persons of different ages is to include several foods that may be fed to all members of the family and then to select certain others proper only for adults and still others suitable for the children. A

sample of such a menu for supper is the one here given. It is assumed that the children that are to eat this meal are not infants.

SUPPER MENU

ADULTS
Rice Croquettes with Cheese Sauce
Lettuce Salad
Bread, Butter, Jelly
Baked Apples
Plain Cookies
Tea

CHILDREN

Steamed Rice
Bread, Butter, Jelly
Baked Apples
Plain Cookies
Milk

A menu of this kind is not difficult to prepare, and still it meets the needs of both the children and the adults of the family. The main dish for each has the same foundation--rice. Enough to serve the entire family may be steamed. Then some may be retained for the children and the rest made up into croquettes and served with cheese sauce to the adults. The remainder of the menu, bread, butter, jelly, baked apples, and plain cookies, may be eaten by every one. Tea will probably be preferred by the adults, but milk should be served to the children. Other suitable menus may be planned without any extra trouble if just a little thought is given to the matter.

PROPORTION OF FOOD SUBSTANCES

54. The proportion of food substances necessary for building and repairing the body and for providing it with material necessary for its various functions is a matter to which much discussion has been given. Formerly, it was not understood that the protein should be limited to exactly what the body needed and that its requirements were comparatively low regardless of conditions or exercise. The standard for diet very often allowed as much as 25 per cent. in protein. This percentage has been gradually reduced by the discovery of the actual body needs, so that now it is believed by the most dependable authorities that only about 10 per cent. of the entire day's rations for the adult should be protein. The growing child needs a greater proportion than this because he is building up muscle tissue. The adult whose muscles have been entirely constructed requires protein only for repair, and 10 per cent. of the day's food in protein is sufficient for this. This means that if the total calories for the day are 2,500, only 250 of them need be protein.

55. The remainder of the calories are largely made up by fat and

carbohydrate. These, however, need not be in such exact proportion as the protein, for no real danger lies in having either one in a greater amount than the ideal proportion. This is usually three-tenths fat and six-tenths carbohydrate or in a diet of 2,500 calories, 750 fat and 1,500 carbohydrate. The carbohydrate is very much in preponderance because of its easy digestion and assimilation. As may be imagined, it is not a simple matter to figure a diet as closely and carefully as this, and it is only in extreme cases where such planning is necessary.

56. The required amount of protein for the ordinary daily diet can be had with about 3 ounces of meat, together with that which is found in the bread, vegetables, and cereals taken each day. At any rate, the menu should be planned so as to supply a protein dish for at least one meal in the day. The fat is supplied largely by the butter taken and the fat used in the cooking of foods. The carbohydrate is provided by the starch found in cereals, bread, and vegetables and by the sugar contained in fruits, as well as that used in the preparation of various foods and in the sweetening of beverages, cereals, and fruits.

In addition to providing these food substances, each meal should include at least one food, and for dinner preferably two foods, that will supply a large amount of mineral salts, cellulose, and vitamines. As will be remembered, fruits and vegetables are the foods to be used for this purpose.

57. This method of menu planning may seem somewhat difficult at first thought, but in reality it is not different from that which the intelligent housewife follows who attempts to provide her family with a variety of foods and who appreciates the value of that variety. If she plans her menu in this manner, prepares the food so that it will be wholesome, easily digested, and given in the proper proportion, and at the same time watches the weights of the members of the family in the manner suggested, she need have no fear about the general health of her family, for it will be well maintained.

* * * * *

MENU MAKING AND TABLE SERVICE

GENERAL RULES FOR MENU MAKING

58. Perhaps the greatest problem in the planning of menus for a family is that of securing sufficient variety. A housewife who uses the same recipes and the same combinations of food repeatedly is apt to get into a rut and the members of her family will undoubtedly lose interest in their meals. This condition results even with the dishes of which those of the family are extremely fond. However, they will not tire so quickly of the foods they care for if such foods are served to them less often. Then, too, there is more chance to practice economy when a larger variety of food is used.

The importance of planning menus systematically should not be

overlooked, either, no matter how simple they may be. Even if breakfast consists of only two or more dishes, luncheon of three or four, and dinner of no more than four or five, a certain amount of planning should be done in order that the meal may be properly balanced. If the suggestions for meal planning already given are applied to this work, very little difficulty will be experienced in providing meals that are both attractive and properly balanced. In addition to these suggestions, a few general rules for menu making ought to be observed. Most of these are simple and can be followed with very little effort.

59. Unless the menu is planned for a special occasion, the cost of the various dishes should be made to balance. For instance, if an expensive meat is to be served, the vegetables and the salad selected to accompany it should be of moderate cost. On the other hand, if an expensive salad is to be served, a dessert of moderate cost, such as a simple rice pudding, should be used to offset the price of the other dish. Planning meals in this way is urged for the sake of economy, and if it is carefully followed, all the meals may be made to average about the same cost.

60. Another important point in successful meal planning is the avoidance of two dishes in the same meal made from the same food. For instance, tomato soup and tomato salad should not be served in the same meal, for the combination is undesirable. Corn soup contrasts much better with tomato salad than does the tomato soup, for it has the bland flavor that is needed to offset the acid salad. Some housewives, it is true, object to such planning on the ground that it does not give them opportunity to utilize all the materials they may have on hand at the same time. But in nearly every instance the materials can be used to excellent advantage in meals that are to follow and, in addition, the gain in variety is sufficient to warrant the adoption of such a method.

61. As there should be variety in the materials used to make up the dishes of a meal, so should there be variety in the flavor of the foods selected. Rice, macaroni, and potato, for instance, make an undesirable combination. They are too similar because they are all high in starch; besides, they resemble one another too closely in consistency and they are all bland in flavor. If a meal contains one or two bland dishes, a special effort should be made to supply some highly flavored dish in order to relieve the monotony. The same thing may be said of acid foods; that is, an oversupply of these is just as distasteful as too many bland foods.

62. To have fresh fruit for the daily breakfast would be very delightful, but such fruit cannot always be secured. When fresh fruit cannot be had every day, it is better to alternate it with canned fruit or stewed dried fruit than to have it for several days in succession and then have to serve the alternative for a number of days. The same is true of cereals. If use is to be made of both cooked and uncooked cereals, it is much better to alternate them than to serve the cooked ones for breakfast for an entire week and then uncooked ones the next week.

63. When two vegetables are used in the same meal, they should be different. Sweet potatoes and white potatoes, although often served together, do not belong in the same meal. In fact, for most seasons of the year, two vegetables dissimilar in consistency should be supplied. For instance, if spinach is included in a meal, some contrasting vegetable, such as carrots, shell beans, etc., should be served with it. Beets and carrots would not make a good combination, nor should cabbage be combined with spinach, especially if both vegetables are prepared with a sour dressing.

64. A bland food or one high in fat, such as roast pork, certain kinds of fish, etc., is much more palatable if a highly seasoned sauce or another highly seasoned food or, in fact, a food of an entirely different flavor is served with it. Apple sauce or baked apples are usually served with roast pork for this purpose, while sour sauces or pickles of some description are served with fish to relieve its blandness.

65. To secure the most successful meals, the main course should be decided upon first and the additional dishes, such as soup, salad, and dessert, should be the second consideration. In this method of planning meals, they can be properly balanced, for if the main course is heavy, the others can be made light or some of them omitted altogether, while if the main course is a light one, heavier dishes may be selected to accompany it.

Whenever it is possible to do so, the heavy meal of the day should be served at noon and the lighter one in the evening. This plan should always be followed for children, and it is preferable for adults. However, having dinner at noon is often very inconvenient and sometimes impossible, because frequently one or more members of the family are at business some distance from home and their coming home at noon for dinner is impractical. In such an event, the evening meal should be the heavy one, but it should not be made too hearty and overeating should be avoided.

At all meals, tea and coffee should be used sparingly. Especially should this rule be followed by persons who are nervous, or high strung, or are troubled with indigestion and insomnia. At any rate, it is advisable not to drink either of these beverages at night.

* * * * *

METHODS OF SECURING VARIETY IN MEALS

CARD-FILE SYSTEM OF MENU MAKING

66. With the general rules for meal planning in mind, the housewife is well prepared to arrange menus that will be properly balanced, as well as varied and attractive. One means of securing variety in menus, and at the same time supplying oneself with a very convenient piece of kitchen equipment, consists in placing the recipes used on small cards and filing them in a card file under the headings to which they belong, as

shown in Figs. 7 and 8. For instance, a heading should be made for soups, one for potatoes, and so on. These cards may then be rotated in order to make up menus. When the first card of each group has been used, it should be placed at the back of the others in that group; then each one will come in the order in which it was originally placed in the file. Of course, when the cards are not filed alphabetically, it is a little more difficult to find the recipes one needs at a particular time, and so if desired other means of using the cards for menu making may be easily devised without changing their position.

[Illustration: FIG. 7]

In addition to serving as a basis for menus, this arrangement takes the place of a cook book. In fact, it is much more convenient, for instead of a book containing recipes on the table where the work is being done, a small card, which takes up less space and is much less likely to be in the way, may be substituted.

[Illustration: FIG. 8]

DINNER MENUS

67. To assist the housewife materially in planning dinners in great variety, Table VII, which contains suggestions for dinner menus, is given. As will be noted, it is intended that each dinner shall consist of a soup, a meat, potatoes in some form, another vegetable, a salad, and a dessert. It is not necessary, of course, to include all these dishes when a simpler meal is desired, but a number of suggestions are given in each group so that there may be a good selection. In order to use this table to advantage and to secure a large variety of menus, different combinations of the various foods may be made. Then, too, the combinations given may be rotated so that frequent repetition of the same combination will be avoided. This table therefore has the advantage over meals planned for 14 or even 21 days, for these must be repeated once in 2 or 3 weeks.

TABLE VII SUGGESTIONS FOR DINNER MENUS

SOUP
1. Tomato Bouillon
2. Rice
3. Cream of Corn
4. Noodle
5. Cream of Pea
6. Julienne
7. Clear Bouillon
8. Oxtail
9. Split-Pea PurØe
10. Cream of Tomato
11. Celery
12. Cream of Onion
13. Barley Broth

14. Cream of Asparagus
15. Vegetable
16. Corn Chowder

MEAT

1. Roast Beef
2. Pork Chops
3. Macaroni and Cheese
4. Broiled Hamburg
5. Baked Fish
6. Broiled Steak
7. Kidney-Bean Loaf
8. Roast Pork
9. Lamb Chops
10. Roast Chicken
11. Baked Beans
12. Meat Loaf
13. Liver and Bacon
14. Roast Mutton
15. Broiled Ham
16. Scalloped Salmon
17. Roast Lamb
18. Lima-Bean Loaf
19. Veal Tongue
20. Fried Oysters

POTATOES

1. Boiled Potatoes with Butter and Parsley
2. Scalloped Potatoes
3. Hashed-Brown Potatoes
4. Baked Potatoes
5. Potato Puff
6. French Fried Potatoes
7. Potato Patties
8. Roast Potatoes
9. Candied Sweet Potatoes
10. Mashed Potatoes
11. Creamed Potatoes
12. Stuffed Potatoes
13. Baked Sweet Potatoes
14. Potatoes au Gratin
15. SautØd Potatoes

VEGETABLES

1. Spinach
2. Green Peas
3. Breaded Tomatoes
4. Squash
5. Red Beets
6. Sweet Corn
7. Buttered Carrots
8. Mashed Turnips
9. Scalloped Eggplant

10. Buttered Cauliflower
11. Hot Slaw
12. Scalloped Tomatoes
13. Carrots and Peas
14. Buttered Kohlrabi
15. Baked Onions
16. SautØd Eggplant
17. Stuffed Peppers
18. Creamed Turnips
19. Browned Parsnips
20. SautØd Tomatoes
21. Escalloped Cabbage
22. Creamed Onions
23. String Beans
24. Asparagus
25. Succotash

SALADS
1. Apple and Celery
2. Lettuce
3. Banana
4. Orange and Coconut
5. Cabbage
6. Tomato
7. Peas and Celery
8. Apple, Date, and Orange
9. Asparagus
10. Pineapple and Nut
11. Green Pepper and Cheese
12. String Bean
13. Fruit
14. Combination
15. Cucumber
16. Waldorf
17. Cabbage and Celery
18. Pineapple and Cream Cheese
19. Humpty Dumpty

DESSERTS
1. Chocolate Blanc Mange
2. Brown Betty
3. Raisin Pie
4. Crackers and Cheese
5. Fruit Gelatine
6. Cake and Fruit
7. Apricot Fluff
8. Tapioca Pudding
9. Steamed Pudding
10. Short Cake
11. Prunes in Jelly
12. Rice Pudding
13. Custard Pie
14. Baked Apples

15. Peach Cobbler
16. Chocolate Bread Pudding
17. Pineapple Tapioca
18. Ice Cream
19. Jelly Tarts
20. Gingerbread and Whipped Cream
21. Indian Pudding, with Custard Sauce
22. Floating Island
23. Prune Fluff
24. Nuts and Raisins

68. In the application of Table VII, use should be made of the dishes numbered 1 in the various groups for the first day's menu. This dinner, then, will consist of tomato bouillon, roast beef, boiled potatoes with butter and parsley, spinach, apple-and-celery salad, and chocolate blanc mange. In this way, the menus should be made by going through the entire list and combining the dishes whose numbers correspond. Upon coming to the last of the soups, which is No. 16, and attempting to make up a menu, it will be discovered that there are only fifteen varieties of potato dishes. In order to obtain a menu, the rotation must be begun again, and so No. 1 of the potato dishes is used. This menu would therefore consist of corn chowder, scalloped salmon, boiled potatoes with butter and parsley, sautØd eggplant, peach-and-cream-cheese salad, and chocolate bread pudding.

In planning menus with the aid of this table, the housewife may not be able to use a certain dish that is suggested because it is out of season, cannot be procured, or resembles too closely some of the other dishes in the menu. In such an event, she should select another dish to take the place of the one that spoils the combination. Likewise, she should not hesitate to make any change that will result in producing properly balanced meals.

LUNCHEON MENUS

69. To aid the housewife in the preparation of suitable luncheons, a large number of luncheon menus are here given. These menus will serve to give variety in the preparation of meals if they are rotated properly and changes are made every once in a while in making up combinations of food for this important and interesting meal.

THE PLANNING OF MEALS

No. 1

Rice Croquettes
Bread and Butter
Fruit Salad
Gingerbread and Cream Cheese

No. 2

Cream-of-Corn Soup
Egg Salad
Whole-Wheat Muffins
Baked Bananas
Tea

No. 3

Creamed Chicken on Toast
Sliced Tomatoes
Rolls
Fruit Cake

No. 4

Scalloped Oysters
Apple-and-Celery Salad
Wafers
Tea

No. 5

Cream-of-Tomato Soup
Hashed-Brown Potatoes
Graham Bread and Butter
Baked Apples
Tea

No. 6

Macaroni and Cheese
Cabbage Salad
Wafers
Sugar Cookies
Coffee

No. 7

Eggs àla Goldenrod
Rice with Raisins
Bread and Jam
Tea

No. 8

Omelet
Toast
Prune Whip
Vanilla Wafers
Tea

No. 9

ConsommØ
Chicken Salad
Rolls
Warm Gingerbread and Whipped Cream

No. 10

Creamed Dried Beef on Toast
Lettuce Salad
Stewed Fruit
Tea

No. 11
Scalloped Corn
Brown Bread and Butter
Fruit Salad
Cheese Straws
Coffee

No. 12

Cold Ham
Potato Salad
Graham Bread and Butter
Cookies
Tea

No. 13

Oyster Stew
Wafers
Celery
Pineapple
Sponge Cake

No. 14

Cheese SoufflØ
Baked Tomato on Toast
Rice Pudding
Tea

No. 15

Meat Pie
Cranberry Jelly
Table Raisins
Coffee

BREAKFAST MENUS

70. WINTER BREAKFAST MENUS.--To assist the housewife in planning

properly balanced breakfast menus for winter, a number of suggestions are here given. These necessarily differ from breakfast menus for other seasons because of the difference in the food that can be obtained. They are usually of a more hearty nature and contain more heat-producing foods.

No. 1

Oranges
Rolled Oats with Cream
Soft-Cooked Eggs
Toast and Butter
Coffee

No. 2

Stewed Prunes
Cream of Wheat with Cream
Broiled Bacon
Muffins and Butter
Coffee

No. 3

Baked Apples
Griddle Cakes with Maple Sirup
Sausage Patties
Coffee

No. 4

Rolls and Butter
Corn Flakes with Hot Milk
Grapefruit
Coffee

No. 5

Vitos with Dates
French Toast and Butter
Jelly
Hot Chocolate

No. 6

Apple Sauce
Fried Cornmeal Mush with Sirup
Broiled Bacon
Coffee

No. 7
Orange Juice
Steamed Rice
Omelet

Cornmeal Muffins and Butter
Coffee

No. 8

California Grapes
Hominy Grits
Waffles and Sirup
Coffee

No. 9

Sliced Bananas
Pearl Barley
Codfish Balls
Marmalade
Toast
Coffee

No. 10

Popovers Filled with Warm Apple Sauce
White Cornmeal Mush
Baked Eggs in Cream
Toast
Coffee

71. SUMMER BREAKFAST MENUS.--During the summer season, fresh fruits of various kinds can be obtained, and these are generally used as the first course for breakfast. As the menus here given show, it is well to vary the fruit course as much as possible, so that there will be no danger of tiring the persons to be served. An uncooked breakfast food is preferable to a cooked one for summer and so several varieties of these are here suggested.

No. 1

Strawberries and Cream
Scrambled Eggs
Toast
Coffee

No. 2

Raspberries
Puffed Rice
Baking-Powder Biscuits and Honey
Coffee

No. 3

Blackberries
Corn Flakes

Creamed Toast
Coffee

No. 4

Blueberries
Grape Nuts and Cream
Jelly
Omelet
Toast
Coffee

No. 5

Sliced Peaches
Puffed Wheat
Clipped Eggs
Toast
Coffee

No. 6

Cantaloupe
Krumbles with Cream
French Toast and Sirup
Coffee

MENUS FOR SPECIAL OCCASIONS

72. Special occasions, such as New Year's, Easter, Fourth of July, Thanksgiving, Christmas, etc., are usually celebrated with a dinner that is somewhat out of the ordinary. Then, too, on such days as St. Valentine's, St. Patrick's, Hallowe'en, etc., it is often desired to invite friends in for a social time of some kind, when dainty, appetizing refreshments make up a part of the entertainment. To assist the housewife in planning menus for occasions of this kind, a number of suggestions are here given. Suitable decorations are also mentioned in each instance, for much of the attraction of a special dinner or luncheon depends on the form of decoration used.

It should not be thought that elaborate, costly decorations are necessary, for often the most effective results can be achieved with some very simple decoration. Of course, the decorations should be suitable for the occasion to be celebrated. Favors of various kinds are generally on sale in confectioners' and stationers' shops, so that, if desired, favors may be purchased. However, the ingenious housewife can, with very little trouble, make favors that will be just as attractive as those she can buy and that will be much less expensive. She may copy some she sees in the shops or work out any original ideas she may have on the most suitable decorations for the occasion.

NEW YEAR'S DINNERS

No. 1

DECORATION--Ground Pine

Cream-of-Tomato Soup
Mustard Pickles
Croutons
Baked Ham
Hot Slaw
Candied Sweet Potatoes
String Beans
Orange-and-Pineapple Salad
Maple Parfait
Macaroons
Salted Nuts
Coffee

No. 2

DECORATION--Potted Jerusalem Cherries

Crab-Flake Cocktail
Asparagus Broth
Radishes
Wafers
Roast Goose
Hot Baked Apples
Creamed Turnips
Mashed Potatoes
Peas-and-Celery Salad
Vanilla Ice Cream, Apricot Sauce
Table Raisins
Coffee

EASTER DINNERS

No. 1

DECORATION--Daffodils

Clear Tomato Soup
Mixed Pickles
Croutons
Creamed Mushrooms in Timbale Cases
Roast Spring Chicken
Mint Sauce
Potato Puff
Creamed Peas and Carrots
Grapefruit-and-Celery Salad

Milk Sherbet
Sponge Cake
Coffee

No. 2

DECORATIONS--Chinese Lilies and Iris

Fruit Cocktail
Bouillon with Whipped Cream and Pimiento
Celery Wafers
Fricassee of Chicken
Riced Potatoes Scalloped Corn
Tomato Salad
Bavarian Cream Salted Nuts
Coffee

ST. VALENTINE PARTIES

DINNER MENU

DECORATIONS--Red Hearts and Ribbons, Red Candle Shades

Heart-Shaped Canapes Olives
Clam Bouillon
Creamed Chicken and Mushrooms in Pattie Shells
Potatoes au Gratin
Grapefruit-and-California-Grape Salad
Vanilla Ice Cream Heart-Shaped Cakes
Candies

LUNCHEON MENU

DECORATIONS--Red Roses, Heart-Shaped Favors, Cupids

Tuna-Fish Salad
Heart-Shaped Brown Bread and Marmalade Sandwiches
Nut Sandwiches
Ice Cream in Heart-Shaped Cases
Small Decorated Cakes
Candies Nuts

ST. PATRICK'S DAY PARTIES

DINNER MENU

DECORATIONS--Shamrocks and Green Ribbon

Cream-of-Pea Soup
Olives Wafers
Roast Pork Loin Potatoes with Parsley Sauce

Tomatoes au Gratin
Green-Peppers-and-Cheese Salad
Lemon Ice Cakes
Coffee Green Mints

LUNCHEON MENU

DECORATIONS--White Narcissus, Green Carnations, Shamrocks

Chicken Salad
Cheese-and-Green-Pepper Sandwiches
Pistachio Ice Cream Sponge Cake
Mint Punch

FOURTH-OF-JULY LUNCHEONS

No. 1

DECORATIONS--Sweet Peas, Small Flags

Iced Tomato Bouillon
Wafers
Cold Sliced Ham
Swiss Cheese
Creamed Potatoes and Peas
Strawberry-and-Pineapple Salad
Coconut Cream Pie
Iced Tea

No. 2

DECORATIONS--Cornflowers and Daisies

Iced Watermelon with Mint
Creamed Chicken and Mushrooms on Toast
Potato Croquettes
Corn on the Cob
Sliced Cucumbers
Vanilla Ice Cream
Chocolate Sauce
Punch

HALLOWE'EN LUNCHEONS

No. 1

DECORATIONS--Pumpkin Jack o' Lantern, Black-Paper Cats and Witches

Tongue Sandwiches
Swiss-Cheese Sandwiches
Cider
Doughnuts

Pumpkin Pie
Molasses Taffy

No. 2

DECORATIONS--Tiny Paper Jack o' Lanterns

Pink Bunny
Brown-Bread-and-Marmalade Sandwiches
Nut Cookies
Gingerbread
Candies
Cider

THANKSGIVING DINNERS

No. 1

DECORATIONS--Basket of Fruit

Oyster Cocktail
ConsommØ with Peas
Celery
Wafers
Roast Turkey
Candied Sweet Potatoes
Asparagus with Drawn-Butter Sauce
Cranberry FrappØ
Head Lettuce
Thousand-Island Dressing
Pumpkin Pie
Fruit
Coffee

No. 2

DECORATIONS--Baby Chrysanthemums

Grapefruit Cocktail
Celery Soup
Olives
Bread Sticks
Roast Chicken
Cranberry Jelly
Mashed Potatoes
Cottage-Cheese Balls
Baked Onions
Stuffed Dates
Mince Pie
Coffee

CHRISTMAS DINNERS

No. 1

DECORATIONS--Small Christmas Tree

Oyster Broth
Oyster Crackers
Small Pickles
Olives
Chicken Pie
Pickled Peaches
Baked Sweet Potatoes
Creamed Cauliflower
Fruit Salad
Christmas Pudding
Sauce
Bonbons
Salted Nuts
Coffee

No. 2

DECORATIONS--Poinsettias and Holly

Grapefruit with Grape Juice
Cream Chicken Bouillon
Stuffed Celery
Wafers
Roast Duck
Currant Jelly
Mashed Potatoes
Baked Squash
Spiced Punch
Cabbage-and-Green-Pepper Salad
Plum Pudding
Sauce
Mints
Almonds
Coffee

WEDDING BREAKFASTS

No. 1

DECORATIONS--Seasonal Flowers

Iced Fruit
Creamed Chicken on Toast
Stuffed Potato
Asparagus with Butter Sauce
Rolls

Marmalade
Butter
Ice
Cake
Coffee

No. 2

DECORATIONS--Seasonal Flowers

Orange and Grapefruit Juice
Broiled Sweetbreads
Creamed Potatoes
Lima-Bean SoufflØ
Hot Biscuits
Honey
Butter
Pineapple Fritters
Milk Sherbet
Cake
Coffee

WEDDING LUNCHEONS

No. 1

DECORATIONS--Seasonal Flowers

Oyster Cocktail
Chicken Soup
Radishes
Olives
Broiled Squab
Browned Potatoes
Fresh String Beans
Fruit Salad
French Ice Cream
Cake
Candies
Coffee

No. 2

DECORATIONS--Seasonal Flowers

Grapefruit Cocktail
Bouillon
Celery
Radishes
Chicken Croquettes
Potato Puff
Stuffed Tomatoes

Bread-and-Butter Sandwiches
Hearts of Lettuce
Mayonnaise
Chocolate Nut Ice Cream
Cake
Mints
Coffee

WEDDING DINNERS

No. 1

DECORATIONS--Seasonal Flowers

Fresh Pineapple
Cream-of-Celery Soup
Ripe Olives
Radishes
Broiled Chicken
Candied Sweet Potatoes
Green Peas in Cream
Corn Fritters
Whole-Wheat Rolls
Butter
Grapefruit Salad
Individual Molds of Ice Cream
Cake
Mints
Coffee

No. 2

DECORATIONS--Seasonal Flowers

Crabflake Cocktail
ConsommØ Julienne
Celery
Olives
Radishes
Roast Young Duck
Mashed Potatoes
Green Lima Beans
Creamed Cauliflower
Rolls
Butter
Waldorf Salad
Vanilla Ice Cream
Chocolate Sauce
Cake
Candies
Coffee

BIRTHDAY PARTIES FOR CHILDREN

BIRTHDAY DINNER

DECORATIONS--Kewpies with Large Bows of Ribbon To be Used as Favors

Fruit Cocktail in Orange Basket
Creamed Sweetbreads on Toast
Mashed Potatoes
Asparagus SouffløØ
Peach-and-Cream-Cheese Salad
Vanilla Ice Cream with Maple Sirup
Birthday Cakes
Candies
Nuts

BIRTHDAY LUNCHEON

DECORATIONS--Pink Sweet Peas, Maiden-Hair Fern, Pink Favors Filled with Candy

Fruit Salad
Wafers
Punch
Chocolate Ice Cream with Marshmallow
Birthday Cake
Stuffed Dates

BIRTHDAY PARTIES FOR ADULTS

BIRTHDAY DINNER

DECORATIONS--Pink Roses, Pink Candle Shades

Fruit Cocktail
Cream-of-Pea Soup
Radishes
Olives
Wafers
Chicken Croquettes
Stuffed Potatoes
Asparagus Tips
Pineapple-and-Cream-Cheese Salad
Meringue GlacØ
Birthday Cake
Coffee

BIRTHDAY LUNCHEON

DECORATIONS--Seasonal Flowers, Candle Shades, and Favors to Match

Lobster Cocktail
Clear Soup
Wafers
Stuffed Olives
Chicken àla King
Julienne Potatoes
Stuffed-Tomato Salad
Chocolate Parfait
Birthday Cake
Candies
Nuts
Coffee

AFTERNOON TEAS

No. 1

Ribbon Sandwiches
Date-and-Nut Sandwiches
Toasted Pound Cake
Salted Nuts
Tea

No. 2

Apricot Sandwiches
Cream-Cheese-and-Peanut Sandwiches
Marguerites
Candied Orange Peel
Tea

SUPPER PARTIES

No. 1

Welsh Rarebit
Tomato Sandwiches
Chocolate Éclairs
Coffee

No. 2

Club Sandwiches
Bisque Ice Cream
Cakes
Coffee

TABLE SERVICE

73. ESSENTIALS OF GOOD TABLE SERVICE.--Too much cannot be said of the importance of attractive table service. The simplest kind of meal served attractively never fails to please, while the most elaborate meal served in an uninviting way will not appeal to the appetite. Therefore, a housewife should try never to neglect the little points that count so much in making her meals pleasing and inviting. It is not at all necessary that she have expensive dishes and linen, nor, in fact, anything out of the ordinary, in order to serve meals in a dainty, attractive way. Some points, however, are really essential and should receive consideration.

74. In the first place, there should be absolute cleanliness in everything used. To make this possible, the dishes should be properly washed and dried. The glasses should be polished so that they are not cloudy nor covered with lint. The silver should be kept polished brightly. The linen, no matter what kind, should be nicely laundered. Attention given to these matters forms the basis of good table service.

[Illustration: FIG. 9]

Close in hand with these points comes a well-arranged and neatly set table. To this may be added some attractive touches in the way of flowers or other simple decoration. These need cost little or nothing, especially in the spring and summer seasons, for then the fields and woods are filled with flowers and foliage that make most artistic table decorations. Often, too, one's own garden offers a nice selection of flowers that may be used for table decoration if a little time and thought are given to their arrangement. In the winter, a small fern or some other growing plant will answer.

75. BREAKFAST, LUNCHEON, AND DINNER SERVICE.--To give an idea of proper table service for the three meals, breakfast, luncheon, and dinner, Figs. 9, 10, and 11 are offered. Attention should be given to the details of each of these, for they show how to arrange meals that are intended to be served tastily and invitingly.

76. In Fig. 9 is shown a breakfast cover for one. By a _cover_ is meant the silver and dishes placed on the table for one person. In a simple meal, this might consist of a knife, a fork, spoons, a plate, a glass, a cup and saucer, and a bread-and-butter plate. Here the cover has been arranged on a breakfast tray for service at a bedside. This meal is not in the least unusual, but it is very dainty and pleasing. It consists of strawberries with the stems left on so that they may be dipped into sugar and eaten, a cereal, a roll with butter, a hot dish of some kind, such as eggs, and a hot beverage.

[Illustration: FIG. 10]

77. A luncheon table with covers for six is shown in Fig. 10. The first course consists of a fruit cocktail, which is placed on the table before the persons to be served are seated. The silver required up to the dessert course is also laid beforehand. Just before the dessert is

served, the entire table should be cleared and the silver necessary for this course laid at each place.

A point to be remembered in the placing of silver is that the various pieces should always be placed on the table in the order in which they are to be used. Here the first spoon is for the cocktail, which is already on the table, while the second spoon is for the soup, the next course. The knife, which is the third piece of silver, with the two forks on the opposite side will be required for the dinner course, while the third fork is a fork for the salad course.

As will be noted, doilies have been used in place of a table cloth for this luncheon. These, which may be as simple or as elaborate as desired, save laundering and, if they are inexpensive, they are an economy as well as a convenience. Since they also make a luncheon table very attractive, they are strongly recommended for meals of this kind. The luncheon napkin, which is smaller than that used for dinner service, should always be placed where it is shown here, that is, at the left of the forks. If only one beverage is to be served, as is usually the case, the glass is placed at the tip of the knife.

[Illustration: FIG. 11]

78. An example of a correctly set dinner table is shown in Fig. 11. A table cloth, as will be noted, is used, for a cloth is always preferable to doilies for dinner. At this meal, the first course is soup. This, with anything that is to be eaten with the soup, such as the wafers used here, or a relish, should be placed before the guests are seated. The bread-and-butter plate, which is placed just at the top of the fork, should also be on the table. Between each two persons, it is well to have a set of salt-and-pepper shakers.

* * * * *

THE PLANNING OF MEALS

EXAMINATION QUESTIONS

(1) What knowledge is necessary for the planning of economical and well-balanced meals?

(2) Discuss a systematic plan for the purchasing of foods.

(3) Compare the advantages of buying foods at a cash store and a credit store.

(4) Mention the advantages of keeping an account of household expenditures.

(5) Tell how economy in the purchase of foods may be practiced.

(6) Discuss the training of a child’s appetite.

(7) Why is a variety of food necessary in the diet?

(8) Name the factors that influence the amount and proportion of food substances required for an adult.

(9) (_a_) Explain the meaning of calorie as applied to food. (_b_) What is the average number of calories required by the adult?

(10) With the aid of Table V, find out how many pounds you are under weight or over weight. Then tell how you would proceed to acquire your correct weight.

(11) Make out menus for breakfast, dinner, and supper for 1 day for a child 12 months old.

(12) Plan a dinner menu that contains foods suitable for both adults and a child 4 years old, and from it select the foods you would give the child.

(13) What does a balanced diet include?

(14) What can be done to balance the cost of foods used in a meal?

(15) Give several points of importance in selecting the dishes for a meal.

(16) Make out menus for the seventeenth and eighteenth days from Table VII.

(17) Plan an original menu and decorations for a dinner you can serve for a special occasion.

(18) What are the advantages of a nicely arranged table?

(19) Give a few general rules for the correct serving of food and setting of tables.

(20) Why is the following menu undesirable and what changes would you suggest to make it more nearly correct?

Cream Soup
Potatoes
Roast Pork
Greens
Bread and Butter
Pudding
Hard Sauce

* * * * *

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